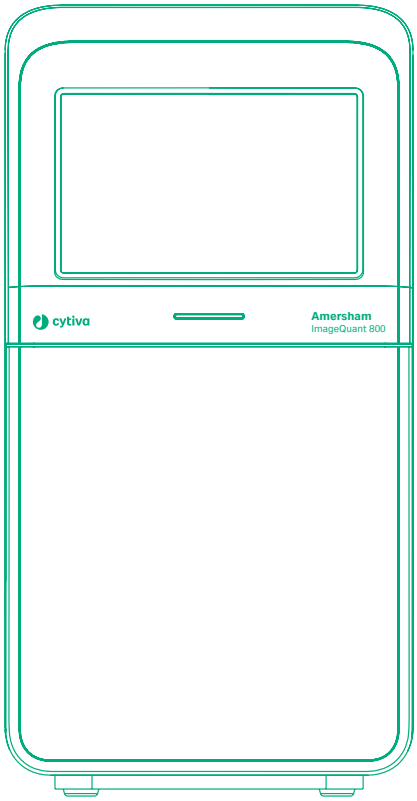
cytiva

Amersham ImageQuant 800

Operating Instructions

Original instructions



cytiva.com

Table of Contents

1 Introduction

About this chapter

This chapter contains important user information, descriptions of safety notices, regulatory information, and a general description of the intended use of Amersham™ ImageQuant™ 800.

In this chapter

1.1 Important user information

Read this before operating the product

All users must read the entire *Operating Instructions* before installing, operating or maintaining the product.

Always keep the *Operating Instructions* at hand when operating the product.

Do not install, operate, or perform maintenance on the product in any other way than described in the user documentation. If you do, you may be exposed or expose others to hazards that can lead to personal injury and you may cause damage to the equipment.

Intended use of the product

The Amersham ImageQuant 800 is a CCD camera system that produces digital images of samples in gels, membranes, plates, and petri dishes in three different modes: chemiluminescence, colorimetric, and fluorescence.

The Amersham ImageQuant 800 is intended for research use only and must not be used in any clinical procedures or for diagnostic purposes.

Prerequisites

In order to operate Amersham ImageQuant 800 in the way it is intended, the following prerequisites must be fulfilled:

- The user must read and understand the Safety Instructions chapter in the Operating Instructions.
- The user must have general laboratory experience.
- Amersham ImageQuant 800 must be installed in accordance with the site requirements and instructions in the Operating Instructions.
- The instrument must be installed by a Cytiva representative or a third party authorized by Cytiva.

Third party intellectual property

With regards to third party patents related to sample preparation etcetera, it is recommended that you consult a lawyer or patent attorney for information on obtaining appropriate licenses.

1.2 About this manual

Purpose of this manual

The Operating Instructions manual provides information needed to install, operate and maintain the product in a safe way.

Scope of this manual

The *Operating Instructions* cover the Amersham ImageQuant 800 instrument, Amersham ImageQuant 800 control software, and Amersham ImageQuant 800 CONNECT software.

If you work in a regulated environment and have purchased and installed Amersham ImageQuant 800 GxP license for Amersham ImageQuant 800 control software, refer to *Amersham ImageQuant 800 GxP User Manual (29620391)* for additional information as software functions can vary.

The illustration below shows the Amersham ImageQuant 800 system.

Note: *Depending on your system configuration, not all options described in this manual may be available. It is possible to upgrade your system to increase the range of imaging options. See* *Section 3.6 Upgrade options, on page 45* *for more information.*

Typographical conventions

Software items are identified in the text by ***bold italic*** text.

Hardware items are identified in the text by **bold** text.

In electronic format, references in *italics* are clickable hyperlinks.

Notes and tips

Note: *A note is used to indicate information that is important for trouble-free and optimal use of the product.*

Tip: *A tip contains useful information that can improve or optimize your procedures.*

1.3 Associated documentation

Introduction

This section describes the user documentation delivered with the product, and how to find related literature that can be downloaded or ordered from Cytiva.

System-specific documentation

The user documentation listed in the table below is available on the web in PDF format.

Documentation	Main contents
Amersham ImageQuant 800 Operating Instructions	Instructions needed to install, operate, and maintain the Amersham ImageQuant 800 in a safe way.
Amersham ImageQuant 800 User Manual	Additional detailed information and instructions for the Amersham ImageQuant 800 instrument, Amersham ImageQuant 800 control software, and Amersham ImageQuant 800 CONNECT.
Amersham ImageQuant 800 GxP User Manual	Additional detailed information and instructions for the Amersham ImageQuant 800 system with Amersham ImageQuant 800 GxP license.
Amersham ImageQuant 800 Privacy and Security Manual	Descriptions of the privacy and security aspects of the Amersham ImageQuant 800 system.
Amersham ImageQuant 800 GxP Privacy and Security Manual	Descriptions of the privacy and security aspects of the Amersham ImageQuant 800 system with Amersham ImageQuant 800 GxP license.

1.4 Abbreviations

Introduction

This section explains abbreviations that appear in the user documentation for Amersham ImageQuant 800.

Abbreviations

Abbreviation	Definition (English)	Translation
CCD	Charge-coupled device	Charge-coupled device
IR	Infra-Red	Infra-Red
NIR	Near infra-red	Near infra-red
NP	Non-parallax	Non-parallax
OD	Optical densiometry	Optical densiometry
OS	Operating system	Operating system
PC	Personal computer	Personal computer
RGB	Red Green Blue	Red Green Blue
SNOW	Signal to Noise Optimization Watch	Signal to Noise Optimization Watch
UV	Ultra-violet	Ultra-violet

2 Safety Instructions

About this chapter

This chapter describes safety precautions, labels and symbols that are found on the equipment. In addition, the chapter describes emergency and recovery procedures.

In this chapter

Important

WARNING

Before installing, operating or maintaining the product, all users must read and understand the entire contents of this chapter to become aware of the hazards involved.

2.1 Safety precautions

Introduction

Amersham ImageQuant 800 is powered by mains voltage and handles materials that can be hazardous. Before installing, operating, or maintaining the system, you must be aware of the hazards described in this manual.

Follow the instructions to avoid injury to the operator or other personnel, damage to samples or other substances handled by the equipment, to the product, or to other equipment in the area.

The safety precautions in this section are grouped into the following categories:

- General precautions
- Personal protection
- Flammable liquids and explosive environment
- Installing and moving the system
- Power supply
- Operation
- Maintenance

Definitions

This user documentation contains safety notices (WARNING, CAUTION, and NOTICE) concerning the safe use of the product. See definitions below.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury. It is important not to proceed until all stated conditions are met and clearly understood.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. It is important not to proceed until all stated conditions are met and clearly understood.

NOTICE

NOTICE indicates instructions that must be followed to avoid damage to the product or other equipment.

General precautions

WARNING

Do not operate the product in any other way than described in the user documentation.

WARNING

Only properly trained personnel may operate and maintain the product.

WARNING

Accessories. Use only accessories supplied or recommended by Cytiva.

WARNING

Do not use Amersham ImageQuant 800 if it is not working properly, or if it has suffered any damage, for example:

- damage to the power cord or its plug
- damage caused by dropping the equipment
- damage caused by splashing liquid onto it

WARNING

Do not block vents and make sure that they are kept free of dust and dirt. Blockage can cause overheating and malfunctioning. To allow adequate cooling make sure there is at least 40 cm of free space in front of the instrument, at least 30 cm on the right, and at least 10 cm on left, rear and top sides between walls or other equipment.

CAUTION

Do not lean on the instrument door or the side door.

Personal protection

WARNING

Hazardous substances. When using hazardous chemicals, take all suitable protective measures, such as wearing protective clothing, glasses and gloves resistant to the substances used. Follow local and/or national regulations for safe operation and maintenance of the product.

CAUTION

Always use appropriate Personal Protective Equipment (PPE) during operation and maintenance of Amersham ImageQuant 800.

- Protective eyewear
- Protective gloves
- Protective footware, preferably with steel lining

CAUTION

The instrument is equipped with a safety interlock. If the interlock is out of order or has been tampered with, UV NIR, and visible light may be emitted, which can cause skin burn and impair vision.

Do not open the instrument door during operation, when the RUN indicator is lit. If the door is opened and the instrument keeps running, turn off the instrument immediately and contact Cytiva service.

Flammable liquids and explosive environment

WARNING

Flammable liquids. This product is **not approved** for handling liquids under conditions where they could be flammable.

Installing and moving the product

WARNING

The product must be installed and prepared by Cytiva personnel or a third party authorized by Cytiva.

WARNING

Heavy equipment. Contact a Cytiva service person before lifting or transporting the instrument.

CAUTION

Amersham ImageQuant 800 must be secured before transport or relocation. Contact Cytiva for instructions before transporting the instrument.

CAUTION

The product is designed for indoor use only.

CAUTION

Make sure that the system is placed on a stable, level bench with adequate space for ventilation.

NOTICE

Any computer used with the equipment must comply with IEC 60950 or IEC 62368-1 and be installed and used according to the manufacturer's instructions.

Power supply

WARNING

Supply voltage. Before connecting the power cord, make sure that the supply voltage at the wall outlet corresponds to the marking on the instrument.

WARNING

Connect the power supply directly to a grounded wall power outlet. The use of extension cords or multiple loads on one electrical outlet could result in fire and electric shock.

WARNING

Power cord. Only use power cords with approved plugs delivered or approved by Cytiva.

WARNING

Protective ground. The product must always be connected to a grounded power outlet.

WARNING

Access to power cord with plug. Do not block access to the power cord. The power cord with plug must always be easy to disconnect.

NOTICE

If the mains power supply is unreliable, an Uninterruptable Power Supply (UPS) must be used.

Operation

WARNING

Never exceed the operating limits stated in this document and on the system label. Operation of the product outside these limits can damage equipment and cause personal injury or death.

WARNING

Do not use the instrument within or near a sink, or in humid (above 70% of relative humidity) or dusty environments. This can result in fire or electric shock.

WARNING

In case of thunderstorm, do not touch the power supply plug, as this can result in electric shock.

CAUTION

Changing the filters must be done using the Amersham ImageQuant 800 control software procedure. Do not manually rotate the filter turret.

CAUTION

Do not use the instrument in a room with a temperature above 28°C. Higher temperatures do not allow the CCD to cool down properly (to -25°C).

CAUTION

Do not insert or spill any substances into the ventilation hole on the side of the instrument.

CAUTION

Reagents used to prepare the sample should be used in accordance with the manufacturer's instructions.

CAUTION

Use the handle to open or close the side door.

CAUTION

Handle the sample trays and NP lens with care to avoid dropping them.

CAUTION

Do not place heavy objects on top of the instrument.

CAUTION

Do not touch the light source in the instrument. The light source may be hot.

CAUTION

Do not leave samples in the instrument after exposure. If left, these may degrade and cause damage to the instrument.

CAUTION

Do not disable the interlock of the equipment as UV light can be emitted if the door is opened.

NOTICE

Do not add and/or remove any files in the folder generated by Amersham ImageQuant 800 with Amersham ImageQuant 800 control software and Amersham ImageQuant 800 CONNECT. Do not modify any folders in which files have been added or removed. This may prevent correct image capture and analysis afterwards.

NOTICE

USB ports cannot be used for charging devices.

NOTICE

Connection of multiple computers to one instrument may impair performance. Simultaneous use can cause loss of data.

NOTICE

Avoid connecting additional accessories such as computers, monitors or keyboards to the instrument during operation as this can stop the exposure or cause loss of data.

NOTICE

Do not turn off power during operation as this can cause loss of data and damage the internal memory. Only turn off power in an emergency situation.

NOTICE

Do not open the instrument door during exposure, when the RUN light indicates operation. This will stop the exposure and data will not be saved.

NOTICE

Transferring large amounts of files to a connected computer during operation can impair system performance.

NOTICE

Do not touch the light source windows as scratches or dirt may impair performance.

NOTICE

When connecting an external monitor to the system, use a monitor with WXGA or higher resolution. With a low-resolution monitor, operation buttons cannot be seen.

NOTICE

Remove all traces of acidic solutions to prevent corrosion in the equipment.

NOTICE

Wear gloves when handling filters to avoid dirtying or scratching the filter.

Maintenance

WARNING

Decontaminate before maintenance. To avoid personnel being exposed to potentially hazardous substances, make sure that the instrument is properly decontaminated and sanitized before maintenance or service.

WARNING

Electrical shock hazard. All instrument repairs or modifications should be performed by service personnel authorized by Cytiva. Do not open any covers or replace parts unless specifically stated in the user documentation.

WARNING

Do not use excessive amounts of liquids for cleaning the Amersham ImageQuant 800 instrument. This may result in instrument malfunction or electric shock.

WARNING

Hazardous chemicals during maintenance. When using hazardous chemicals for system cleaning, wash the system with a neutral solution in the last phase or step.

CAUTION

To reduce the risk of dust entering the turret and affecting the filters, do not leave the turret door open for long periods of time.

CAUTION

Wear gloves while cleaning. There might be residues of hazardous chemicals.

CAUTION

Disconnect the power cord before cleaning the inside of the instrument.

NOTICE

Do not use abrasive cleaning materials, such as a scouring pad, for cleaning. This may cause damage to the instrument.

2.2 Labels

Introduction

This section describes the system label and other safety or regulatory labels that are attached to the product.

System label

The system label identifies the product and shows electrical data and regulatory compliance information.

Description of symbols and text on the system label

The following symbols and text may be present on the system label.

Label	Meaning
	**Warning!** Read the user documentation before using the system. Do not open any covers or replace parts unless specifically stated in the user documentation.
	This symbol indicates that the waste of electrical and electronic equipment must not be disposed as unsorted municipal waste and must be collected separately. Please contact an authorized representative of the manufacturer for information concerning the decommissioning of equipment.
Frequency **Supply Voltage** **Max. Current**	Electrical requirements: • Frequency (Hz) • Supply Voltage (VAC ⏦) • Max. Current (VA)
⏦	Alternating current.
Protection Class	Degree of protection provided by the enclosure.
Manufac-turing Year and Month	Year (YYYY) and month (MM) of manufacture.

Position of labels and additional symbols

The system label and FCC/ICES label are positioned on the rear of the Amersham ImageQuant 800 instrument.

Additional symbols

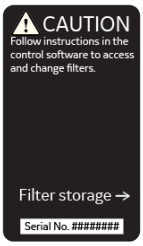
The following additional symbols are positioned at the side or rear of the instrument.

Label	Meaning
	On/Off button
	USB3.0 port
	USB2.0 port
	HDMI port

Interior labels

The following labels are positioned on the inside of the instrument cabinet.

Label	Meaning
	Upper tray position, for Chemiluminescence and White Epi imaging only.
	Caution, hot surface. Light sources in the instrument may become hot.
	Lower tray position.

Label	Meaning
	Caution. Follow instructions in the control software to access and change filters. Also indicates the position of the filter storage and the serial number of the instrument.

Position of interior labels

The image below shows the position of the interior labels.

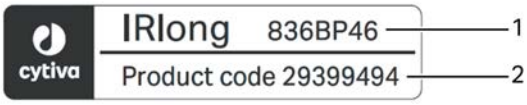
Position	Label
1	Upper tray label
2	Hot surface caution
3	Lower tray label

Position of filter turret label

The image below shows the position of the filter turret label that contains the caution notice.

Filter labels

The illustration below shows the an example of the filter label found on each filter frame.



Part	Function
1	Filter type
2	Filter product code

2.3 Emergency procedures

Introduction

This section describes how to shut down the Amersham ImageQuant 800 in an emergency situation, and the procedure for restarting the system.

The section also describes the result in the event of power failure.

Precautions

WARNING

Access to the power cord with plug. Do not block access to the power cord. The power cord with plug must always be easy to disconnect.

Emergency shutdown

In an emergency situation, do the following to shut down the instrument.

Step	Action
1	Press the power button on the right side of the instrument.

Step	Action
2	If the instrument is not powering down, disconnect the power cord from the instrument. 

Note: *The emergency shutdown only shuts down the instrument. Any computer that is connected to the instrument will still be on. The connected computer will enter sleep mode after a set period of time.*

Power failure

The following table describes the consequences of a power failure.

Power failure to...	will result in...
ImageQuant 800 instrument	• The run is interrupted immediately. • Any image capture in process will be lost. Only saved data will be available on reboot. • The **Power** indicator switches off.
Computer	• The **Power** indicator on the instrument control panel displays blue. • The run is interrupted immediately. • If a run was in process, no image data will be saved.

Restart after emergency shutdown or power failure

To restart the system after an emergency shutdown, follow the startup procedure in *Section 5.1 Start the Amersham ImageQuant 800, on page 72*.

3 System description

About this chapter

This chapter presents an overview of Amersham ImageQuant 800 features and different instrument configurations. It also contains descriptions of hardware components, software displays, and functions.

In this chapter

3.1 Introduction

The Amersham ImageQuant 800 is an imaging instrument designed to detect and quantify proteins, DNA, and other biological samples, such as bacterial colonies.

A cooled 8.3 megapixel CCD camera is used to capture high resolution digital images of electrophoretically separated protein and DNA bands in gels or membranes obtained through blotting methods. Use of the optional NP lens also allows for image capture from multi-well plates and petri dishes.

The instrument can capture images of chemiluminescent, fluorescent, and colorimetric samples, depending on the system configuration. It is also possible to capture optical densitometry (OD) images of stained gels to accurately measure amount of proteins in bands on a gel. Image files obtained from the instrument can also be analyzed with the ImageQuant TL software.

For regulated environments, Amersham ImageQuant 800 GxP license is available for Amersham ImageQuant 800 control software. Contact a Cytiva representative to learn more about this option.

The instrument is designed to be used for research purposes in life science laboratories within academia and industry.

3.2 Illustration of the system

The Amersham ImageQuant 800 is operated from an external computer that can either be placed in the VESA™ mount at the rear of the instrument, or separately next to the instrument. The illustration below shows the Amersham ImageQuant 800 setup and the main parts of the system. For details on specifications of connected equipment, see *Section 8.1 Specifications, on page 112*.

The illustration shows the Amersham ImageQuant 800 system.

3.3 Instrument description

Main components in each configuration

The Amersham ImageQuant 800 is available in different configurations. Different parts and functions are present depending on which upgrade options are used.

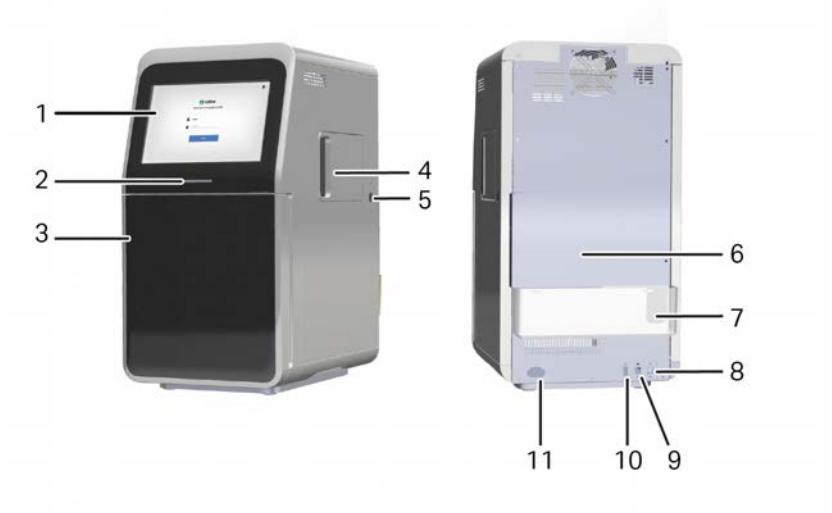
The table below describes the functions and components of the different instrument configurations. For more information on instrument configurations, see *Section 3.6 Upgrade options, on page 45*.

Functions	ImageQuant 800	ImageQuant 800 UV	ImageQuant 800 OD	ImageQuant 800 Fluor
Control Software for image capture	X	X	X	X
GxP functionality (available as optional purchase)	X	X	X	X
Amersham ImageQuant 800 CONNECT for remote file transfer and scheduling	X	X	X	X
CCD camera head including lens	X	X	X	X
Filter turret		X	X	X
Epi White light source	X	X	X	X
Epi UV light source		X	X	X
Trans White light source			X	X

Functions	ImageQuant 800	ImageQuant 800 UV	ImageQuant 800 OD	ImageQuant 800 Fluor
Blue, Green, and Red Epi light sources				X
Epi IRshort and IRlong light sources				X

Amersham ImageQuant 800 exterior

The Amersham ImageQuant 800 is operated from an external computer that can either be placed in the bracket at the rear of the instrument, or separately next to the instrument. The illustration below shows the Amersham ImageQuant 800 setup and the main parts of the system. For details on specifications of connected equipment, see *Section 8.1 Specifications, on page 112*.



Part	Function	Description
1	Touchscreen	Main interface with instrument software.
2	Power indicator	Indicates the status of the instrument: OFF, sleep, busy, or ready-to-use
3	Door	Instrument door.
4	Side door	Provides access to the filter turret to change custom filters used in the instrument.

Part	Function	Description
5	Power button	Hardware power button.
6	External PC mount	Space for attaching VESA mount to hold the external PC.
7	Cable holder	Holder that can be attached to tidy cables from the external PC.
8	USB3.0 port	Connection between the instrument and external computer for instrument control.
9	USB2.0 port	Connection to external computer for touchscreen control.
10	HDMI port	Connection between the external computer and the touchscreen display.
11	Power socket	Connector for attaching AC power cord.

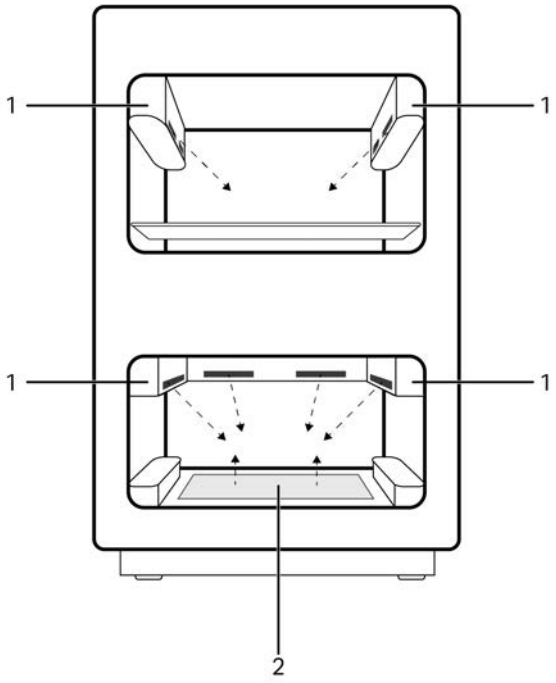
Amersham ImageQuant 800 interior

The illustration below shows the interior of the ImageQuant 800 instrument.

Part	Function
1	Upper tray position
2	Lower tray position

Amersham ImageQuant 800 light sources

The Amersham ImageQuant 800 houses Epi and Trans light sources. The illustration below shows the location of these light sources.



Part	Function
1	Epi light source[1]
2	Trans light source

[1] Forward Epi light source in the lower tray position is not shown is this illustration.

Amersham ImageQuant 800 power indicator

The illustration below shows the location of the power indicator on the instruments.

Indicator	Color	Description
Power Indicator (1)	Blue	Illuminates when the instrument is running (during processing, exposure, data communication, filter change, and shutdown processing).

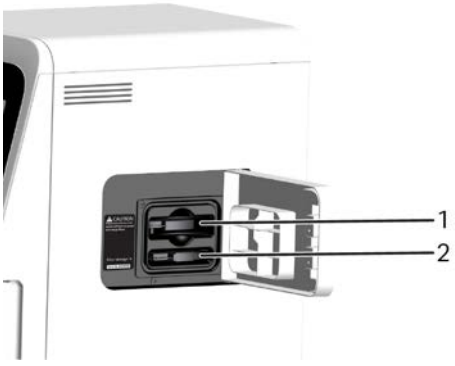
Indicator	Color	Description
	Green	Illuminates when instrument is in standby or ready to be used mode.
	Blue	Pulses when instrument is in sleep mode.
	Red	Illuminates when there is an error in the process or if the instrument door is opened during exposure.
	Off	Indicator is off when the instrument is off.

Filter turret

The ImageQuant 800 is equipped with a filter turret that is capable of housing up to seven different filters, including two customizable filters. For information on how to change filters, see *Select filter, on page 80*. The image below shows the opened side door through which the filter turret can be accessed. A locking bolt is in place to make sure that the side door remains securely closed.

CAUTION

Changing the filters must be done using the Amersham ImageQuant 800 control software procedure. Do not manually rotate the filter turret.



Part	Function
1	Filter turret
2	Custom filter holder storage

3.4 Amersham ImageQuant 800 control software

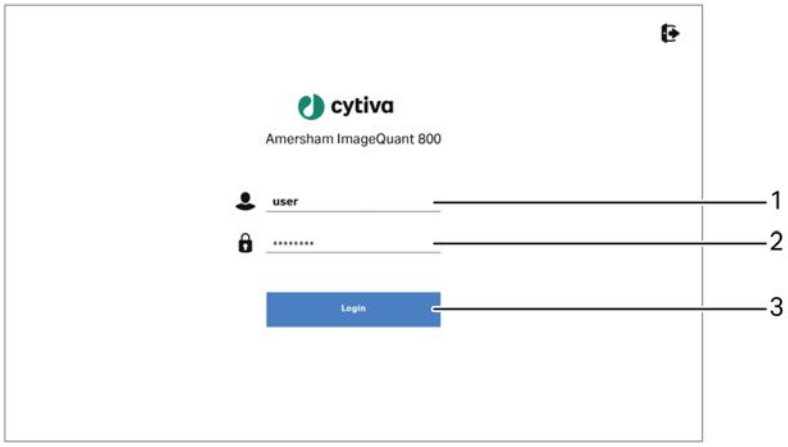
The Amersham ImageQuant 800 control software is designed to guide the user through the workflow of capturing images. The software is operated from a touchscreen on the front of the instrument and is run from an external PC. It is also possible to operate the software from an external monitor that is connected to the PC. For more information on setting up the external PC, see *Section 4.5 System setup, on page 56*. This section describes the main components and functions of the Amersham ImageQuant 800 control software.

Note: *The available functions may vary depending on the software version and the system configuration. For details on system configurations see Section 3.6 Upgrade options, on page 45.*

Note: *If Amersham ImageQuant 800 GxP license is installed on your system, see The Amersham ImageQuant 800 GxP Login screen and Home screen, on page 42 and refer to instructions provided in the Amersham ImageQuant 800 GxP User Manual (29620391).*

Login screen

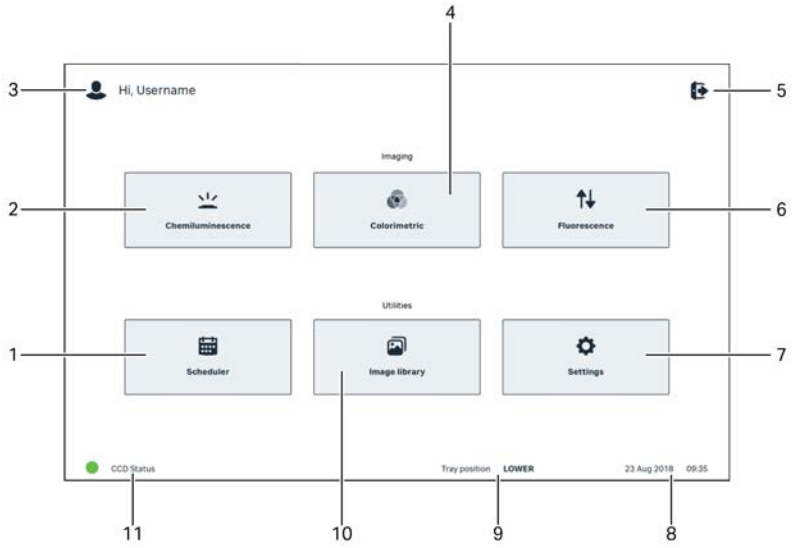
The ***Login*** screen is displayed on start up. Here the user can log in to the instrument using their ***Username*** and ***Password***.



Part	Function
1	***Username*** entry
2	***Password*** entry
3	***Login*** button

The *Home* screen

The ***Home*** screen is displayed as the default start screen when the Amersham ImageQuant 800 is turned on and the start up procedure and login is completed. It allows you to select an image capturing method (***Chemiluminescence***, ***Colorimetric***, or ***Fluorescence***) and to access the ***Scheduler***, ***Image library***, and ***Settings*** utilities screens. The following illustration describes the basic elements of the ***Home*** screen.

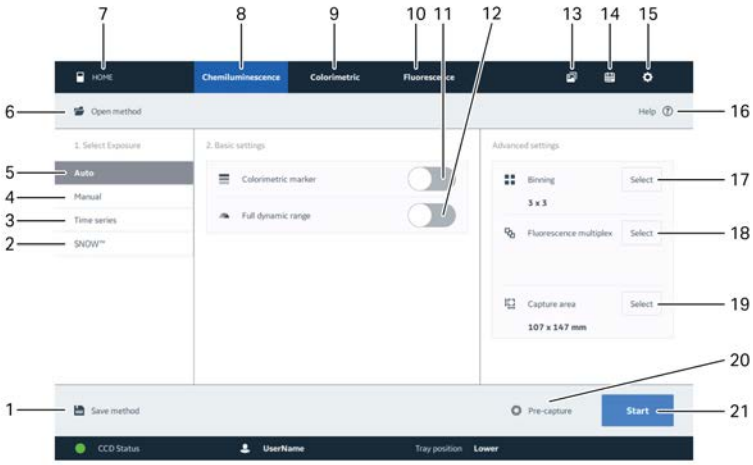


Part	Function
1	***Scheduler*** tab. Select to access the scheduler calendar and booking functions.
2	***Chemiluminescence*** tab. Select for chemiluminescence imaging.
3	Profile indicator. Displays the username of the user currently logged in to the Amersham ImageQuant 800.
4	***Colorimetric*** tab. Select for colorimetric imaging.
5	Options to ***Shut down*** the instrument, ***Minimize application***, ***Logout*** from the software, show software version information, or show the ***License*** agreement.
6	***Fluorescence*** tab. Select for fluorescence imaging.
7	***Settings*** tab.

Part	Function
8	Time and date indicator.
9	***Tray position***. Indicates the current tray position in the Amersham ImageQuant 800 as either ***Upper***, ***Lower***, ***NP lens for plates***, or ***None***.
10	***Image library*** tab.
11	***CCD Status*** indicator.

The *Chemiluminescence* screen

The illustration below shows the main components of the ***Chemiluminescence*** screen.

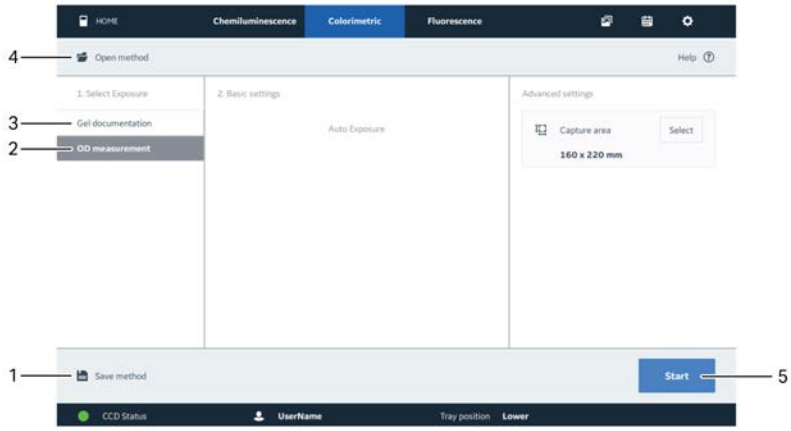


Part	Function	Part	Function
1	Save image capture settings as a method	12	Toggle full dynamic range
2	SNOW (noise reduction mode)	13	***Image library*** tab
3	Time series exposure	14	***Scheduler*** tab
4	Manual exposure	15	***Settings*** tab
5	Automatic exposure	16	Help
6	Open saved methods	17	Select binning

Part	Function	Part	Function
7	Return to ***Home*** screen	18	Select fluorescence multi-plex
8	***Chemiluminescence*** tab	19	Change capture area
9	***Colorimetric*** tab	20	Start pre-capture
10	***Fluorescence*** tab	21	Start capture
11	Toggle colorimetric marker		

The *Colorimetric* tab

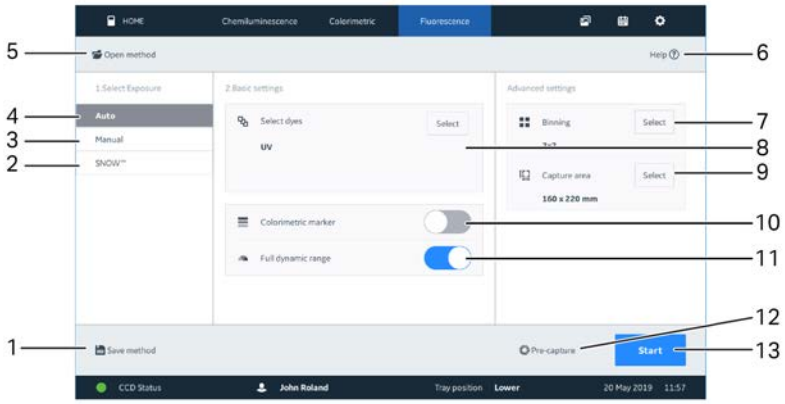
The illustration below shows the main components of the ***Colorimetric*** screen.



Part	Function	Part	Function
1	Save image capture settings as a method	4	Open method
2	OD measurement	5	Start capture
3	Gel documentation		

The *Fluorescence* tab

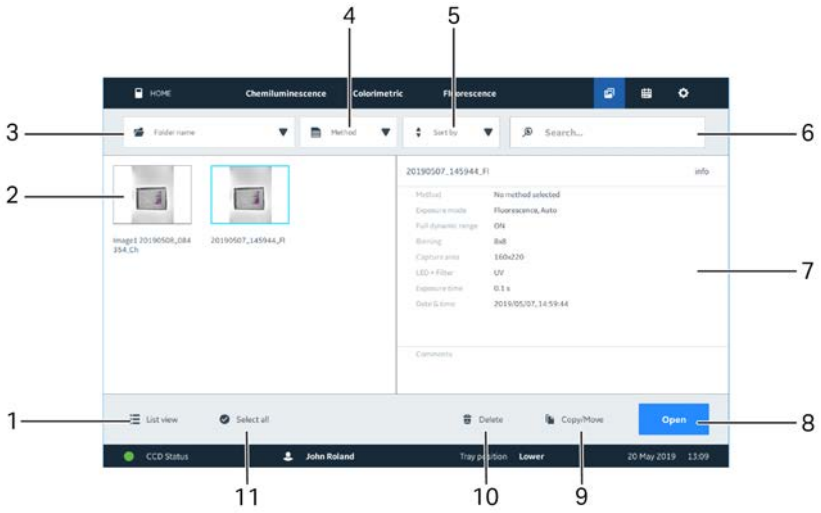
The illustration below shows the main components of the ***Fluorescence*** screen.



Part	Function	Part	Function
1	Save image capture settings as a method	8	Select dyes
2	SNOW (noise reduction mode)	9	Select capture area
3	Manual exposure	10	Toggle colorimetric marker
4	Auto exposure	11	Toggle full dynamic range
5	Open method	12	Start pre-capture
6	Help	13	Start image capture
7	Select binning		

The *Image library* view

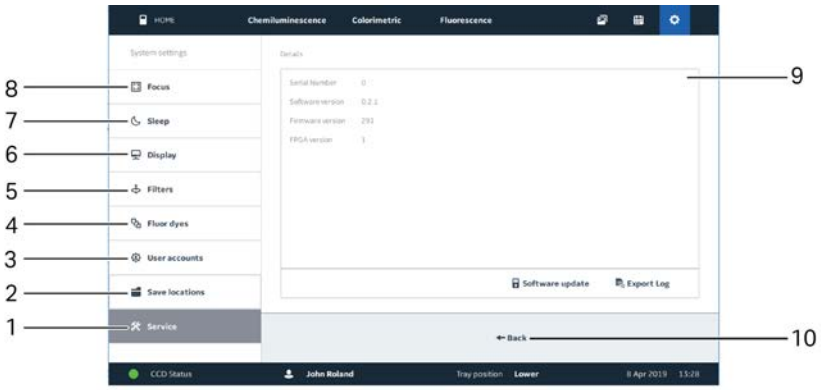
The illustration below shows the main components of the ***Image library*** screen.



Part	Function	Part	Function
1	Toggle between list and grid (thumbnail) view	7	Selected image information
2	Image thumbnails from selected folder	8	Open selected image
3	Select image folder	9	Copy/move image
4	Select imaging method	10	Delete image
5	Sort images	11	Select all images
6	Search images		

The *Settings* view

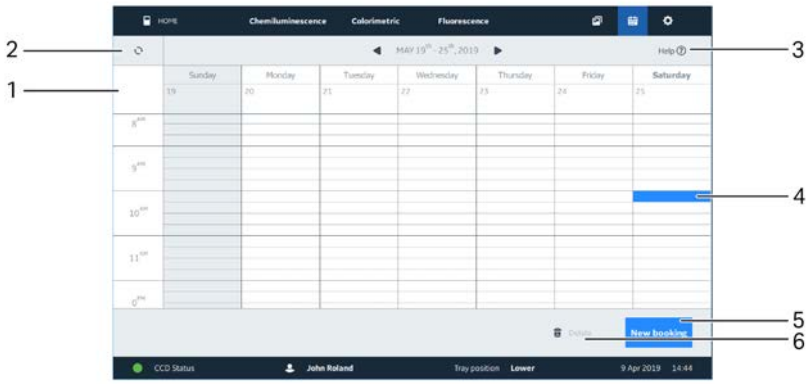
The illustration below shows the main components of the ***Settings*** screen.



Part	Function	Part	Function
1	Service	6	Display
2	Save locations	7	Sleep
3	User accounts	8	Focus
4	Fluorescence dyes	9	Selected settings window
5	Filters	10	Back

The *Scheduler* screen

The illustration below shows the main components of the ***Scheduler*** screen.

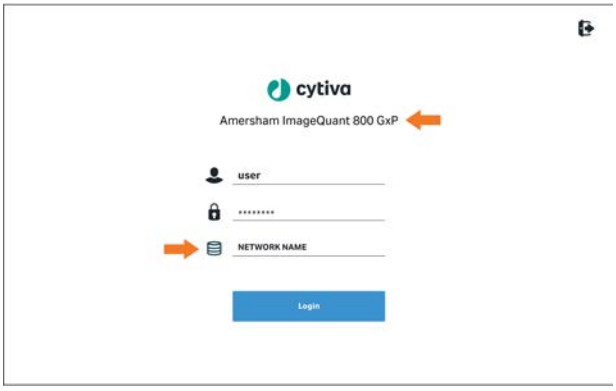


Part	Function	Part	Function
1	Calendar	4	Selected time
2	Refresh calendar	5	Create new booking
3	Help	6	Delete booking

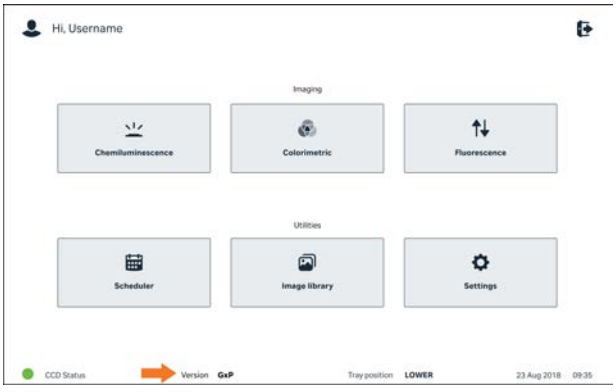
The Amersham ImageQuant 800 GxP *Login* screen and *Home* screen

If you work in a regulated environment and have purchased and installed Amersham ImageQuant 800 GxP license for Amersham ImageQuant 800 control software the ***Login*** screen and the ***Home*** screen will differ. Refer to *Amersham ImageQuant 800 GxP User Manual (29620391)* for the instructions on the GxP functions.

The following illustration describes the differences in the ***Login*** screen if Amersham ImageQuant 800 GxP license is installed.



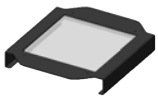
The following illustration describes the difference in the ***Home*** screen if Amersham ImageQuant 800 GxP license is installed.



3.5 Accessories

Accessories delivered with the instrument

The following table shows the accessories for the Amersham ImageQuant 800. Depending on the instrument configuration, the accessories included might vary.

Image	Accessory	Description
	Black tray	Used in the upper or lower tray positions for chemiluminescence, colorimetric, fluorescence, and plate imaging.
	Glass tray[1]	Used in lower tray position only for OD measurements.
	White insert	Placed inside the black tray when performing colorimetric imaging.
	Cable holder	Attaches to the rear of the instrument and holds cables from the external PC.
	Non-Parallax (NP) lens[2]	Used when imaging plates to eliminate shadows.
	NP Tray Guide[2]	Used with NP lens. Placed inside the black tray to provide a holder for a multi-well plate or petri dish.
	Custom filter holder[2]	A holder for an optional filter.

[1] Only included with the OD module.
[2] Optional accessory.

The instrument is also delivered with the following cables:

- AC power cord (for North America)

- AC power cord (for Europe)
- USB3.0 cable
- USB2.0 cable
- HDMI cable

Note: *If an external monitor is to be used, another cable is required to connect the PC to the monitor. The type of cable needed depends on the display ports in the external monitor and PC.*

3.6 Upgrade options

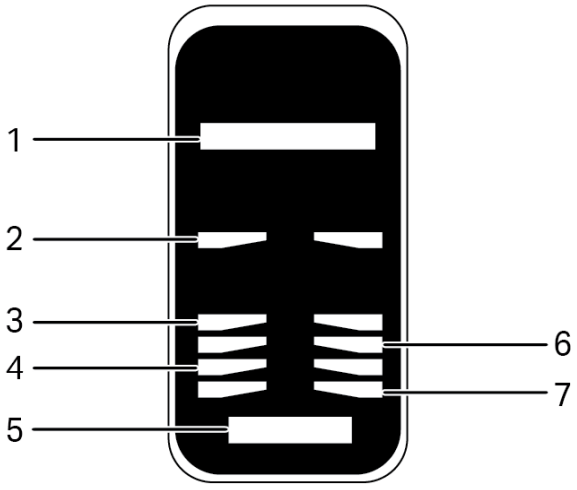
Introduction

It is possible to purchase additional kits to upgrade the ImageQuant 800 and increase imaging options of the system. There are four main configurations, as described in the table below.

Configuration	Imaging capabilities
ImageQuant 800	Chemiluminescence and **White Epi**
ImageQuant 800 UV	Chemiluminescence, **White Epi** and **UV Epi**
ImageQuant 800 OD	Chemiluminescence, **White Epi**, **UV Epi**, and **White Trans** (OD)
ImageQuant 800 Fluor	Chemiluminescence, **White Epi**, **UV Epi**, **White Trans** (OD), **RGB Epi**, and **NIR Epi** (IRlong and IRshort)

Light sources in the Amersham ImageQuant 800

The following image shows the positions of the different light sources available for the Amersham ImageQuant 800.



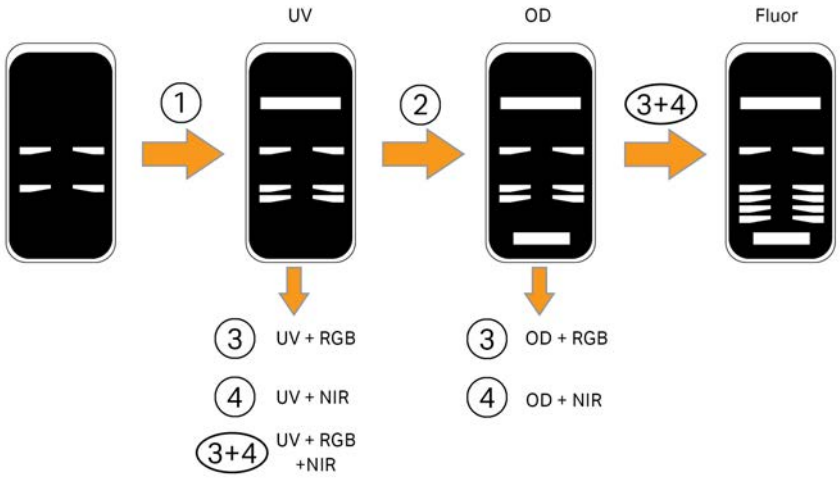
Part	Function	Description
1	**Filter turret**	Filter turret capable of housing **Cy2**, **Cy3(UV)**, **Cy5**, **IRlong** and **IRshort** filters, depending on the configuration
2	**White Epi**	Epi-white light for colorimetric imaging, upper tray position
3	**White Epi**	Epi-white light for colorimetric imaging, lower tray position
4	**RGB Epi**	Epi-red, green, blue light for fluorescent imaging
5	**White Trans**	White trans OD light for colorimetric imaging
6	**UV Epi**	Epi-UV light for fluorescent imaging
7	**NIR Epi**	Epi-NIR light for fluorescent imaging, comprising IRlong and IRshort

Upgrade paths

Each configuration of the ImageQuant 800 can be upgraded by using one of the upgrade options. The upgrade paths and additional functions from each upgrade are described in the table below.

Upgrade path	Upgrade option	Description of functions
ImageQuant 800		Basic configuration
ImageQuant 800 to ImageQuant 800 UV	UV module	Adds **filter turret**, **UV Epi** light, and **Cy3(UV)** band pass filter
ImageQuant 800 UV to ImageQuant 800 OD	OD module	Adds **White Trans** (OD) light, and glass tray
ImageQuant 800 OD to ImageQuant 800 Fluor	RGB module and NIR module	Adds **RGB Epi** and **NIR Epi** lights, and **Cy2**, **Cy5**, **IRlong**, and **IRshort** filters

In addition to the four main configurations, it is possible to make additional configurations by using alternative upgrade paths. The main upgrade paths and optional routes are shown in the illustration below.



Part	Function
1	UV module
2	OD module
3	RGB module
4	NIR module

4 Installation

About this chapter

This chapter describes site requirements and preparations necessary to perform before installation of the Amersham ImageQuant 800 instrument.

In addition, instructions are included for moving the Amersham ImageQuant 800 instrument within the lab or to another building.

WARNING

The product must be installed and prepared by Cytiva personnel or a third party authorized by Cytiva.

In this chapter

4.1 Site requirements

Introduction

This section describes the specifications to which the installation site must comply.

Space requirements

Prepare a clean working area on a stable laboratory bench. The bench must comply with the specifications in the following table.

Parameter	Specification
Minimum bench area for operating the ImageQuant 800	70 × 60 cm
Free space required around the imager	At least 40 cm free space in front of the instrument 10 cm free space on the left, rear, and top sides of the instrument. 30 cm free space on the right side of the instrument.
Load capacity	981 N (100 kg) or higher
Inclination of bench surface	Horizontal ± 2°

WARNING

Access to power cord with plug. Do not block access to the power cord. The power cord with plug must always be easy to disconnect.

NOTICE

This equipment is not intended for use in residential environments and might not provide adequate protection to radio reception in such environments.

Dimensions and weight

The following illustration shows the dimensions of the instrument.

Amersham ImageQuant 800 weighs 39 kg.

Environmental conditions

The following general requirements must be fulfilled:

- The instrument should not be exposed to sources of heat, such as radiators or direct sunlight
- Dust in the atmosphere should be kept to a minimum
- The equipment must not be excessively exposed to vibration or impacts
- Exposure to corrosive gas must be avoided

Ambient temperature requirements

The following table describes the environmental requirements for Amersham ImageQuant 800.

CAUTION

Do not use the instrument in a room with a temperature above +28°C. Higher temperatures do not allow the CCD to cool down properly (to -25°C).

Parameter	Requirement
Operating temperature/humidity conditions	Temperature: 18°C to 28°C (with temperature fluctuation below 10°C per hour or lower) Humidity: 20% to 70% RH (no dew condensation) ***Note:*** *When the above conditions cannot be satisfied, take appropriate actions.*
Transportation/ storage conditions	Temperature: -20°C to 70°C Humidity: 5% to 95% RH (no dew condensation) ***Note:*** *When the above conditions cannot be satisfied, take appropriate actions.*
Operation site	Indoor use
Maximum operating altitude	≤ 2000 m
Noise	≤ 60 dB (A) A-weighted sound pressure level LAeq, t ≤ 60 dB, fast (t = 0.25 s 1 m from the instrument)
Protection provided by enclosure	IP21
Overvoltage category	Transient overvoltage category II
Rated pollution applied	Pollution degree 2

Parameter	Requirement
Other conditions	1. Take into consideration the workflow and ancillary facilities when planning the installation. 2. Any required construction and electricity/air conditioning work must be completed prior to installation. 3. It is not desirable to have a heat source near the Amersham ImageQuant 800 air intakes, even if the other environmental requirements have been met. 4. Do not install the equipment near a window. Avoid direct sunlight. Ensure blinds are attached to nearby windows. 5. Do not place objects near the power outlet to ensure easy access to the power cord for disconnection in case of emergency.

External PC requirements

The Amersham ImageQuant 800 uses an external PC to run the system software. The table below indicates the minimum system requirements.

Parameter	Minimum requirements
Operating system	Windows® 10 Professional 64 bit (English or Japanese), or Windows 10 IoT Enterprise 2016 LTSB 64 bit (English or Japanese)
Processor	Intel® Core™ i5 8500 or higher
Hard Disk space	256 GB SATA HDD or SSD
RAM	16 GB
Ports	USB3.0 USB3.0 HDMI [1]
Additional media	DVD drive for software installation

[1] If an external monitor is being used, an additional monitor port and cable that is compatible with the monitor is required.

To fit into the PC holder at the rear of the instrument, the computer must be compatible with a VESA mount.

4.2 Instrument setup

Amersham ImageQuant 800 is initially installed by Cytiva service representatives or a third party authorized by Cytiva.

For connecting additional monitors or peripheral equipment, contact Cytiva for instructions.

4.3 Amersham ImageQuant 800 control software installation

All tasks related to software installation require a computer account with administrator privileges.

Amersham ImageQuant 800 control software is installed by Cytiva service representatives or a third party authorized by Cytiva.

4.4 Moving the Amersham ImageQuant 800

WARNING

Heavy equipment. Contact a Cytiva service person when lifting the instrument.

WARNING

Do not block vents and make sure that they are kept free of dust and dirt. Blockage can cause overheating and malfunctioning. To allow adequate cooling make sure there is at least 40 cm of free space in front of the instrument, at least 30 cm on the right, and at least 10 cm on left, rear and top sides between walls or other equipment.

WARNING

Access to power cord with plug. Do not block access to the power cord. The power cord with plug must always be easy to disconnect.

The ImageQuant 800 must be secured before long distance transportation. Contact Cytiva for instructions before transportation or relocation of the instrument.

If a smaller movement of the instrument is necessary on the laboratory bench, the instrument can be moved by carefully pushing it along the bench surface.

4.5 System setup

Introduction

This section describes how to connect a computer to the Amersham ImageQuant 800, and set system-specific settings in the Amersham ImageQuant 800 control software.

In this section

4.5.1 Connections

External connections

The Amersham ImageQuant 800 has the following ports to connect to an external PC:

- USB2.0
- USB3.0
- HDMI

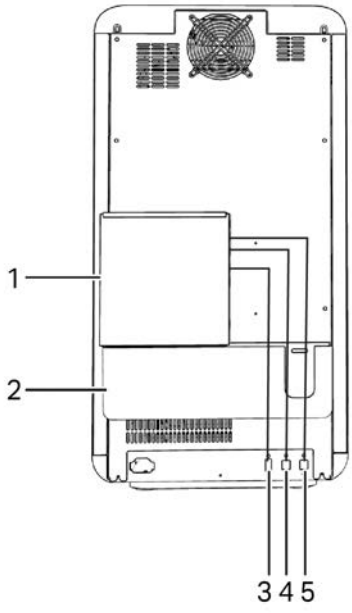
The Amersham ImageQuant 800 can be connected in two configurations:

1. With an external PC
2. With an external PC connected to an external monitor

Note: *Connecting the HDMI cable to the external PC depends on the display ports available on the external PC. An adaptor, for example, an HDMI to DisplayPort™ adaptor, might be required.*

Connection to an external PC

The illustration below shows the connections between the ImageQuant 800 and an external PC.

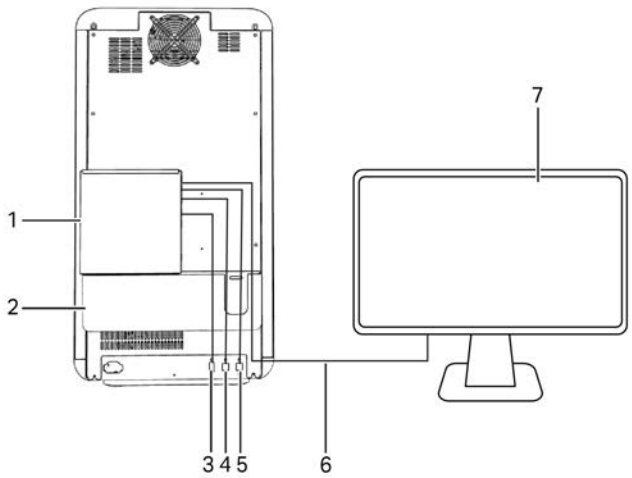


Part	Function
1	External PC fixed on a VESA mount
2	Cable holder
3	Display connection[1]
4	USB2.0 connection
5	USB3.0 connection

[1] The connection type depends on the external PC setup.

Connection to external PC and an external monitor

The illustration below shows the connections between the ImageQuant 800 and an external PC with an external monitor.



Part	Function
1	External PC fixed on a VESA mount
2	Cable holder
3	HDMI connection[1]
4	USB2.0 connection
5	USB3.0 connection
6	Display connection[2]

Part	Function
7	External monitor

[1] An adaptor might be required to connect the HDMI cable to the external PC, depending on the available display ports.
[2] The connection type depends on the monitor setup. An adaptor might be required if the monitor does not have an HDMI port.

Connect to the external PC

To connect the Amersham ImageQuant 800 to the external PC, use the following procedure.

Step	Action
1	Place the external computer in the VESA mount (1) attached to the rear of the instrument.

2	Insert the **USB3.0** cable into the **USB3.0** port at the rear of the instrument. Connect the other end of the cable to the external PC.
3	If an external monitor is not being used, connect the **USB2.0** cable to the **USB2.0** port at the rear of the instrument. Connect the other end of the cable to the external PC.
4	Connect the **HDMI** cable to the display port on the external computer.[1]

[1] An adaptor might be required to connect the HDMI cable to the external PC, depending on the available display ports.

4.5.2 Amersham ImageQuant 800 control software

The Amersham ImageQuant 800 is operated through the Amersham ImageQuant 800 control software interface. Using this software, it is possible to setup personal accounts, book experiments using the calendar function, and capture images. For more information on these functions, refer to the *Amersham ImageQuant 800 User Manual (29383813)*.

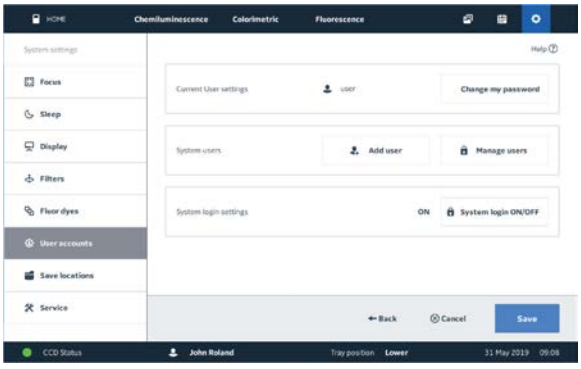
Note: *The following instructions refer only to the standardAmersham ImageQuant 800 control software. If Amersham ImageQuant 800 GxP license is installed on your system, refer to instructions provided in the Amersham ImageQuant 800 GxP User Manual (29620391).*

Turn off password protection

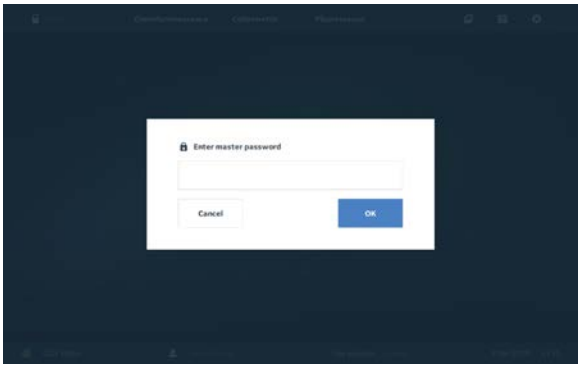
By default, the Amersham ImageQuant 800 control software is password protected. It is possible to turn off the password requirement for the Amersham ImageQuant 800 by disabling the ***System login***. To do this, use the following procedure.

Step	Action
1	In the ***Home*** screen, tap ***Settings*** in the bottom right corner of the screen.

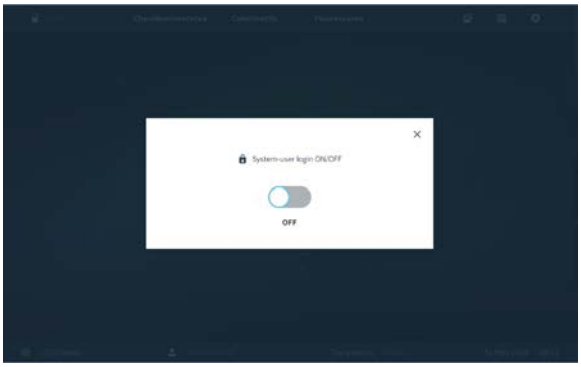
2	Tap ***User accounts*** on the left side of the screen.



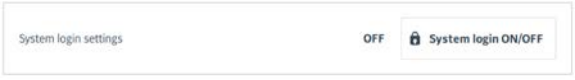
Step	Action
3	Next to ***System login settings***, tap ***System login ON/OFF***.
4	Enter the master password and tap ***OK***.



5	Slide the ***System user login ON/OFF*** toggle to ***OFF***.



6	Close the ***System user login ON/OFF*** window by tapping the cross in the top right corner. *Result:* the ***System login settings*** now shows as ***OFF***.

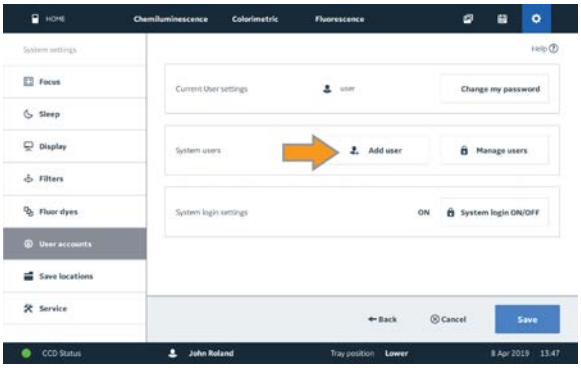


7	Tap ***Save***.

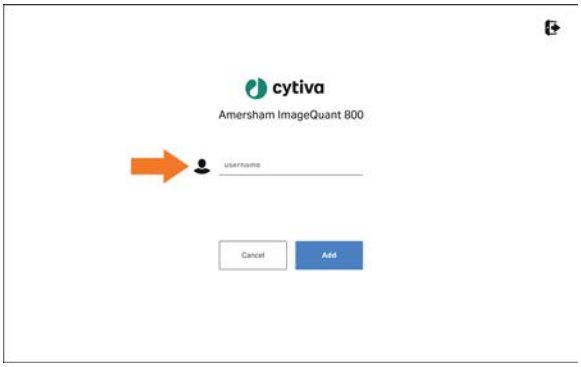
Step	Action
8	Shut down the Amersham ImageQuant 800 control software, see *Section 5.4 Shut down the Amersham ImageQuant 800, on page 92*. ***Note:*** *The new setting is available after restarting the Amersham ImageQuant 800 control software.*

Create a new user

New users can be added in the ***Settings*** view. To do this, use the following procedure.

Step	Action
1	In the ***Home*** screen, tap ***Settings*** in the lower right corner of the screen. 
2	Tap ***User accounts*** on the left side of the screen.
3	Tap ***Add user***. 

Step	Action
	Result: the ***Add user*** screen shows.



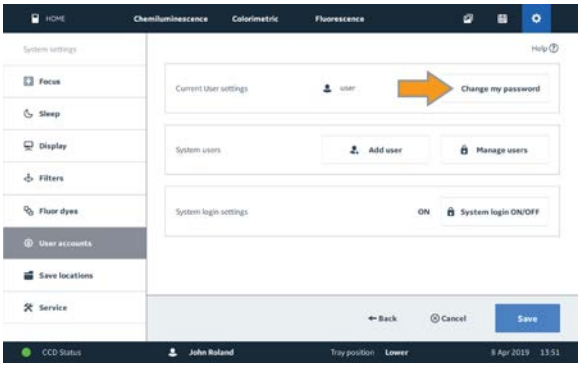
4	Enter the ***Username*** for the new user.
5	Enter a ***Password*** for the new user.
6	Type the password again in the ***Confirm password*** space.
7	Tap ***Add***.
8	Tap ***Save***.

Change a password

To change the password of the current user, follow the procedure below.

Step	Action
1	In the ***Home*** screen, tap ***Settings*** in the lower right corner of the screen.
2	Tap ***User accounts*** on the left side of the screen.

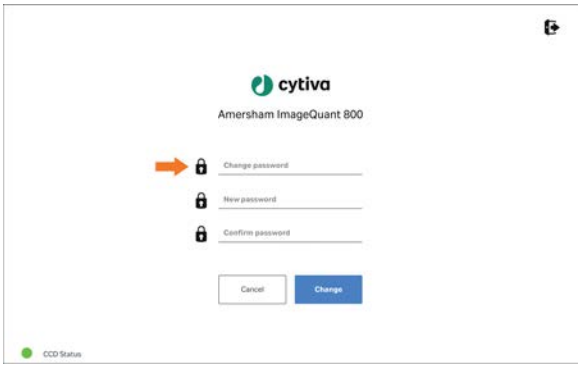
Step	Action
3	Tap ***Change my password***.



Result:

the ***Change password*** screen shows.

4	Enter the ***Current password*** for the current user.



5	Enter a ***New password*** for the user.
6	Type the password again in the ***Confirm password*** space.
7	Tap ***Add***.
8	Tap ***Save***.

System settings

System settings are found under the ***Settings*** view. Open the settings view by tapping ***Settings*** in the lower right corner of the ***Home*** screen.

Amersham ImageQuant 800 CONNECT

File transfer, calendar booking, and image viewing can be performed via another computer on the network using the Amersham ImageQuant 800 CONNECT software. See the *Amersham ImageQuant 800 User Manual (29383813)*.

4.6 Network

Introduction

The Amersham ImageQuant 800 uses an external PC to connect to the local network. This enables the user to transfer and access files on remote computers that have Amersham ImageQuant 800 CONNECT software installed. It is also possible to check the instrument status and use the booking calendar from a remote computer via Amersham ImageQuant 800 CONNECT.

Network setup

The Amersham ImageQuant 800 connects to the network via the external PC. Refer to the manufacturer's instructions to connect to your local network.

Instrument access from network

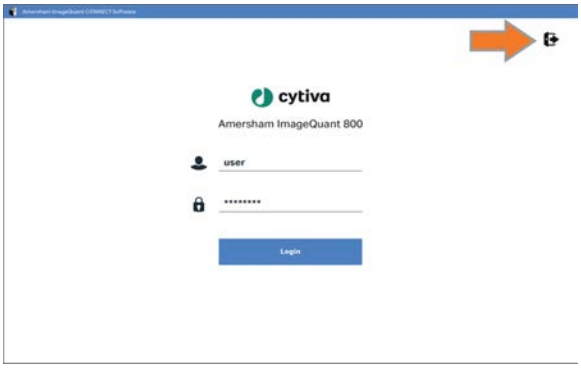
It is possible to access the Amersham ImageQuant 800 remotely via a computer elsewhere on the network using the Amersham ImageQuant 800 CONNECT software. For detailed information, see the *Amersham ImageQuant 800 User Manual (29383813)*. Amersham ImageQuant 800 CONNECT software client is delivered on a DVD. To install Amersham ImageQuant 800 CONNECT, see the *Amersham ImageQuant 800 CONNECT Installation Guide (29445845)* in the relevant DVD case.

Add an instrument to the Amersham ImageQuant 800 CONNECT software

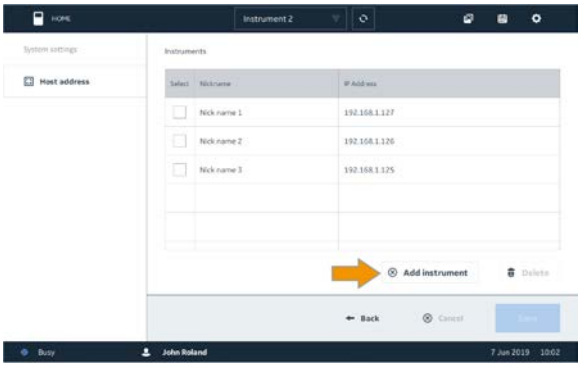
To connect a new instrument to the Amersham ImageQuant 800 CONNECT software, use the following steps.

Step	Action
1	Double click on the Amersham ImageQuant 800 CONNECT icon.
2	Carefully read the license agreement and click ***I Agree***.

Step	Action
3	Click the options icon in the top right corner and click ***Settings***.

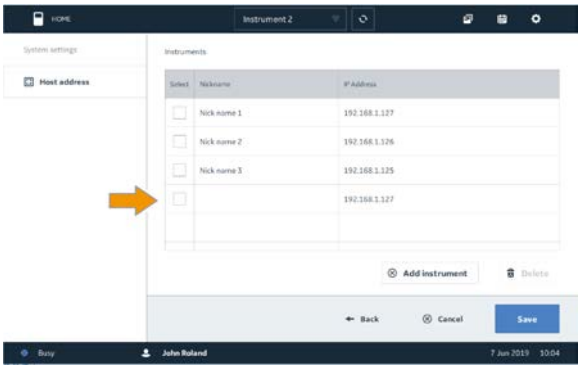


4	Click ***Add instrument***.

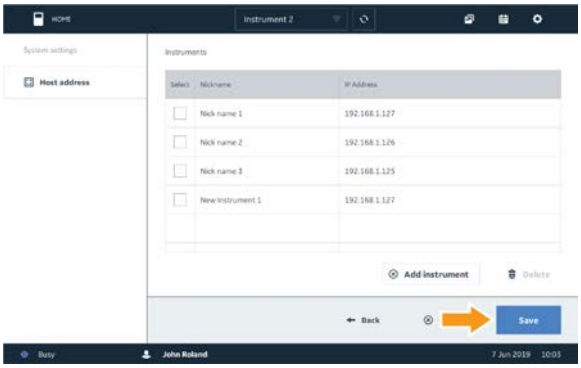


Result:
a new line appears on the ***Instruments*** list.

5	Enter the ***Nickname*** of the new instrument in the new line.



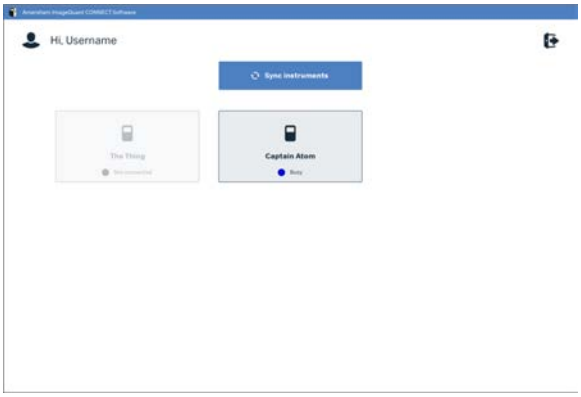
Step	Action
6	Enter the ***IP Address*** of the new instrument.
7	Click ***Save***.

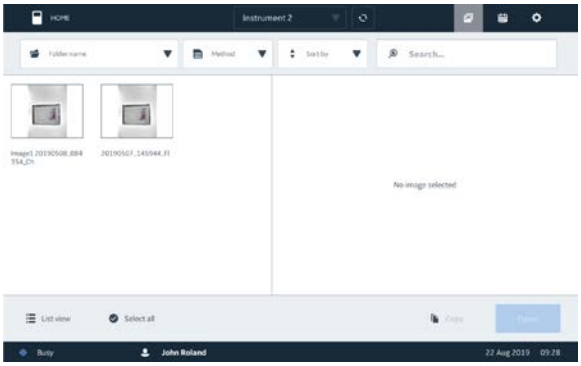


Remote access via Amersham ImageQuant 800 CONNECT

To login to Amersham ImageQuant 800 CONNECT and access the Amersham ImageQuant 800 from a remote computer, use the following procedure.

Step	Action
1	Double click on the Amersham ImageQuant 800 CONNECT icon.
2	Carefully read the license agreement and click ***I Agree***.
3	Enter your ***User name*** and ***Password***. Click ***OK***. *Result:* the Amersham ImageQuant 800 CONNECT ***Home*** screen shows.



Step	Action
	Note: *To refresh the status of the connected instruments, click* ***Sync****.*
4	Select the instrument to connect to. *Result:* the selected instrument ***Image Library*** screen shows. 

5 Operation

About this chapter

This chapter describes how to operate the Amersham ImageQuant 800.

WARNING

Do not operate Amersham ImageQuant 800 in any other way than described in the Operating Instructions.

WARNING

Never exceed the operating limits stated in this document and on the system label. Operation of the product outside these limits can damage equipment and cause personal injury or death.

CAUTION

Do not use the instrument in a room with a temperature above 28°C. Higher temperatures do not allow the CCD to cool down properly (to -25°C).

CAUTION

Always use appropriate Personal Protective Equipment (PPE) during operation and maintenance of Amersham ImageQuant 800.

- Protective eyewear
- Protective gloves
- Protective footware, preferably with steel lining

NOTICE

Do not turn off power during operation as this can cause loss of data and damage the internal memory. Only turn off power in an emergency situation.

In this chapter

5.1 Start the Amersham ImageQuant 800

Before starting the system

Before starting the Amersham ImageQuant 800, make sure that the instrument is connected to an external PC, see *External connections, on page 57*.

Start the system

Follow the steps below to start the Amersham ImageQuant 800.

Step	Action
1	Make sure that the instrument is plugged in to a mains power supply.
2	Press the power button on the right side of the instrument to activate it.

Result:

The instrument's self-diagnostic process will initialize.

Note:

The self-diagnostic process will normally take approximately 5 minutes. Connection to a network may take longer.

3	Turn on the computer and log into Windows.
4	Tap ***I Agree*** to agree to the ***End User License Agreement***.

Note:

Uncheck the ***Show license agreement at startup*** *box to no longer see the* ***End User License Agreement*** *at startup.*

5	Enter your ***Username*** and ***Password***.

Note:

To disable ***Log in****, refer to* *Turn off password protection, on page 60*.

6	Tap ***Login***.

Step	Action
7	Wait for the ***CCD status*** to turn green, which shows that the CCD has been cooled to the target temperature.

Result:

Image capturing can begin.

Start the system using an external monitor

It is also possible to start the system via the external PC if an external monitor is being used. To do this, use the following procedure.

Step	Action
1	Make sure that the instrument is plugged in to a mains power supply.
2	Press the power button on the right side of the instrument to activate it.

Result:

The instrument's self-diagnostic process will initialize.

Step	Action
	Note: *The self-diagnostic process will normally take approximately 5 minutes. Connection to a network may take longer.*
3	Turn on the computer and log into Windows.
4	Double click on the Amersham ImageQuant 800 control software icon to connect to the instrument.  *Result:* The power indicator on the Amersham ImageQuant 800 illuminates blue.
5	If the power indicator on the instrument does not illuminate blue, turn on the Amersham ImageQuant 800 using the power switch on the right side of the instrument.
6	If ***Login*** is turned ***On***, enter your ***Username*** and ***Password***. ***Note:*** *To enable or disable **Log in**, refer to Turn off password protection, on page 60.*
7	Wait for the ***CCD status*** to turn green.  *Result:* Image capturing can begin.

Start the instrument from sleep mode

After a set period of inactivity, the instrument enters sleep mode. Tap the touchscreen to wake the instrument from sleep mode. The ***Login*** screen will display. If password protection has been turned off, the ***Home*** screen will display.

Note: *The default time until the instrument enters sleep mode is 30 minutes. This can be changed, see* *Sleep mode, on page 95**.*

5.2 Prepare the instrument

Select the tray

The following table describes the suitable tray and accessory for each capturing method.

CAUTION

Handle the sample trays and NP lens with care to avoid dropping them.

NOTICE

If samples are dropped inside the instrument, clean it immediately.

Capture method	Tray type	Accessory
Chemiluminescence	Black tray	
Chemiluminescence - with colorimetric marker	Black tray	White insert
Colorimetric	Black tray	White insert
Fluorescence	Black tray	
Plate and petri dish imaging	Black tray	NP lens
OD measurement	Glass tray	

Place the tray in the instrument

To place the sample on the tray and place the tray in the correct tray position in the Amersham ImageQuant 800, follow the steps below.

Step	Action
1	Select a tray and accessories suitable for the capturing method. See *Select the tray, on page 76*.
2	Place the sample(s) on the tray or on the **White Insert**.
3	Open the instrument door.

Step	Action
4	Insert the tray in to either the **Upper** or **Lower** position. For more information on tray positions, see *Field of view, on page 77*. ***Note:*** *If using the* **NP Lens***, make sure that it is fully inserted into the tray position.*
5	Close the instrument door.

Image a plate using the NP lens

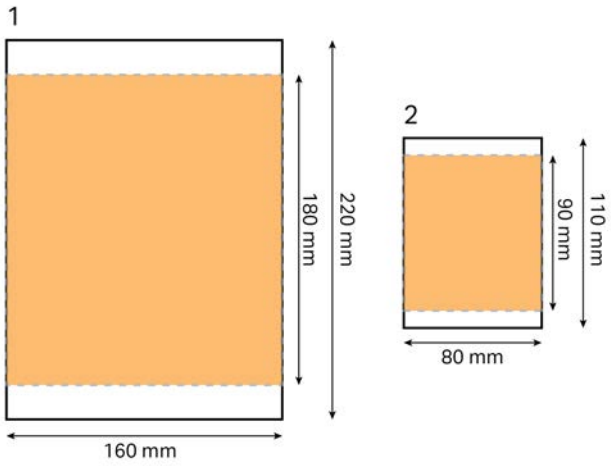
To capture images of multi-well plates and petri dishes, use the optional **NP lens** for even quantitative measurements. To do this, use the following procedure.

Step	Action
1	Place the **tray guide** inside the **black tray**.
2	Place the multi-well plate or petri dish into the cutout in the centre of the **tray guide**.
3	Open the instrument door
4	Insert the tray into the lower tray position
5	Insert the **NP lens** into the lower tray position on top of the tray. ***Note:*** *The* **NP lens** *must be inserted fully up to the stop position.*
6	Close the instrument door.

Field of view

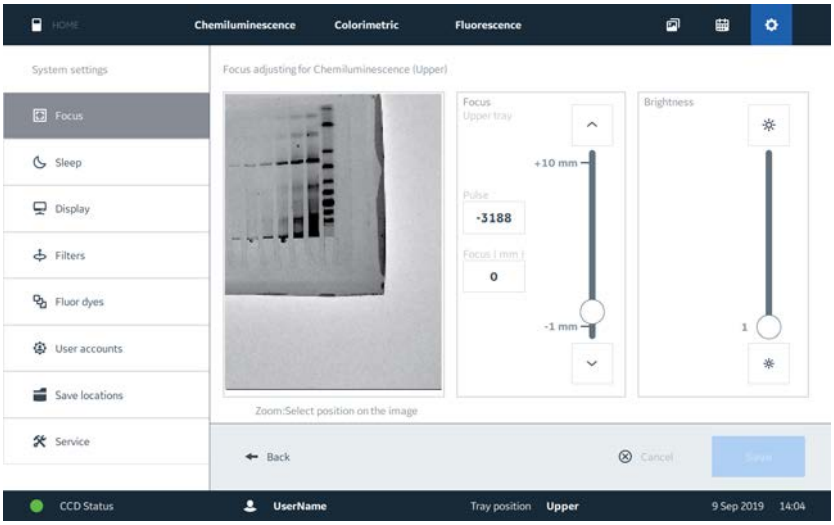
The available imaging view depends on which tray position is used and which accessories, if any, are used. The field of view is smaller and the exposure time is shorter in the upper tray position.

The image below illustrates the difference between the different field of views for the **Lower** (1) and **Upper** (2) tray positions. Shaded areas indicate the area of the high-performance field of view.



Adjust focus

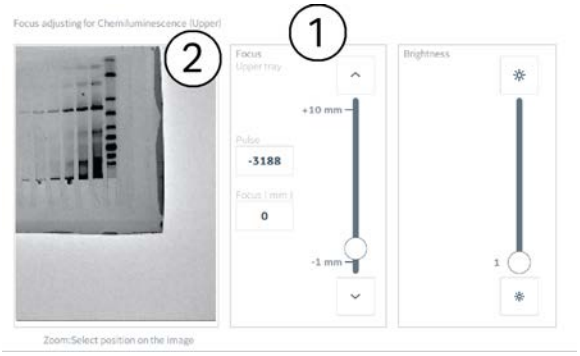
The focus is normally fixed. For thick samples however, or when imaging multi-well plates or petri dishes, the focus might need to be adjusted. The image below shows the ***Focus view*** in the system settings.



To adjust the focus, follow the steps below:

Step	Action
1	Open the ***Settings*** tab.
2	Select ***Focus*** from the left side of the screen.

Step	Action
3	Adjust the slider in the ***Focus*** box (1) to change the focus. The result can be seen in the live view window (2).



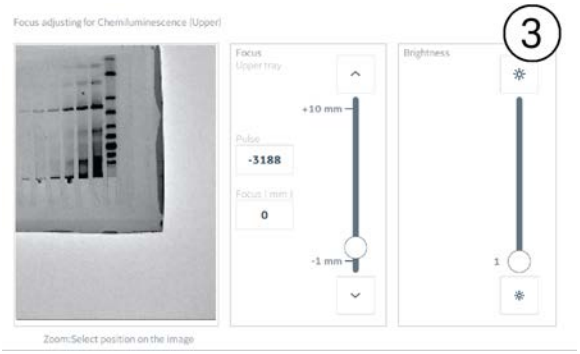
Note:

A precise focal distance can also be typed in the ***Focus (mm)*** *box.*

Note:

Tapping on the live view window will zoom in and out of the image.

4	Adjust the slider in the ***Brightness*** box (3) to change the brightness of the image.



5	Tap ***Save*** to save the focus settings and return to the previous view.

Select filter

WARNING

Changing the filters must be done using the control software procedure. Do not open the filter door before initiating the process in Amersham ImageQuant 800 control software.

CAUTION

To reduce the risk of dust entering the turret and affecting the filters, do not leave the turret door open for long periods of time.

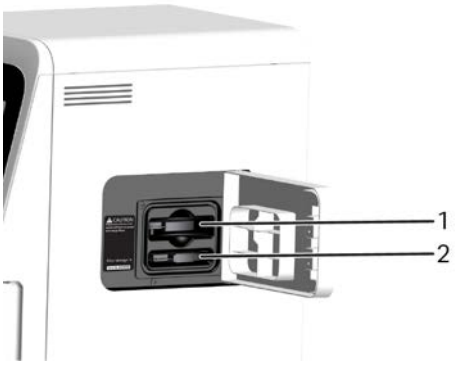
CAUTION

Use the handle to open or close the side door.

NOTICE

Wear gloves when handling filters to avoid dirtying or scratching the filter.

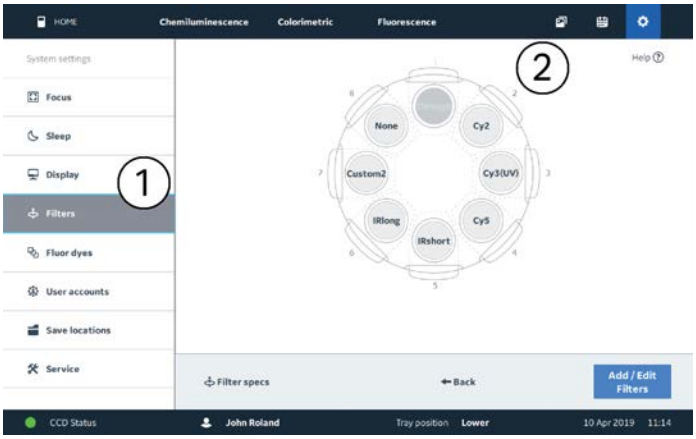
The Amersham ImageQuant 800 contains an accessible filter turret that houses up to seven different filters, including the option for two custom filters. This can be accessed via the door on the right side of the instrument. For more information on the available filters, see *Imaging specifications, on page 112*. Custom filters are placed in the custom filter holder for use with the ImageQuant 800. For instructions on preparing custom filter, see *Prepare a custom filter, on page 84*.



Part	Function
1	Filter turret
2	Custom filter holder storage

To change filter, follow the steps below:

Step	Action
1	On the control panel, click on ***System settings***.
2	Tap ***Filters*** in the left hand menu (1) and select the filter to be changed (2). The selected filter will automatically rotate to the accessible position in the turret.



3	Tap ***Next***. *Result:* The filter turret will rotate to allow access to the selected filter. ***Note:*** *Do not open the filter turret door while the turret is rotating.*

Step	Action
4	When the selected filter position is available, unscrew the locking bolt on the side door.

5	Open the side door.

Step	Action
6	Pull out the filter and place it in the storage compartment.

NOTICE

Wear gloves when handling filters to avoid dirtying or scratching the filter.

7	Place the new filter in the turret and close the side door.
8	Tighten the locking bolt on the side door fingertight.

9	Wait while the software recognizes the new filter.

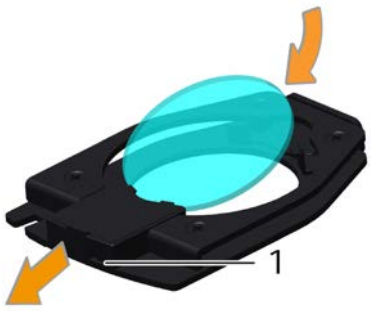
Step	Action
10	When the custom filter is recognized, click ***Save***.
11	To add another filter, click ***Add filter***.

Prepare a custom filter

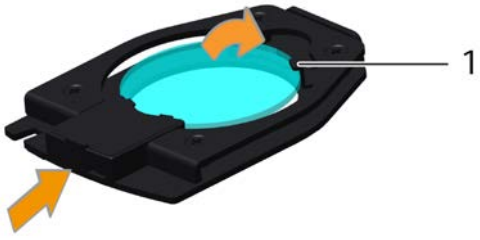
Custom filters are housed in the custom filter holder. Once inserted into the custom filter holder, the custom filter can be placed into the ImageQuant 800 in the same way as a standard filter as detailed in *Select filter, on page 80*.

To prepare a custom filter for use with the custom filter holder, use the following procedure:

Step	Action
1	Pull back the filter holder handle (1) and place the edge of the filter against the inside of the handle.



2	Lower the opposite edge of the filter so that it lies flat in the filter holder under the two notches (1).



Step	Action
3	Release the handle so that it returns to its original position. The custom filter is now ready for use.

Filter storage

The ImageQuant 800 can store one custom filter internally. To access and store a custom filter, use the procedure below.

Step	Action
1	Unscrew the locking bolt on the side door. 
2	Open the side door. 

Step	Action
3	Remove the custom filter holder.

4	To change the filter in the custom filter holder, follow the procedure on *Prepare a custom filter, on page 84*.
5	Place the custom filter holder back in the storage slot.

6	Close the side door.

Step	Action
7	Tighten the locking bolt on the side door fingertight. 

5.3 Image capture

About this section

This section provides simple instructions for capturing an image using the Amersham ImageQuant 800 control software interface. For a more detailed description of individual image capture methods, their features, and how to use them, see the *Amersham ImageQuant 800 User Manual (29383813)*.

Capture methods

The Amersham ImageQuant 800 supports three modes of image capture: chemiluminescence, colorimetric, and fluorescence. The main functions and uses of these modes are described in the table below.

Image capture mode	Imaging options	Sample type
Chemiluminescence	Chemiluminescence	Enzymatically labelled membranes (e.g., horseradish peroxidase)
	With colorimetric marker	Colorimetric markers (e.g., Amersham Rainbow™ Markers)
Colorimetric	Gel documentation	Colorimetric stained gels (e.g., Coomassie and silver staining)
	OD measurement	Quantitative densiometry measurement
Fluorescence	Fluorescence	Fluorescent labelled membranes DNA gels (e.g., ethidium bromide and alternatives staining)
	With colorimetric marker	Colorimetric markers (e.g., Amersham Rainbow Markers)

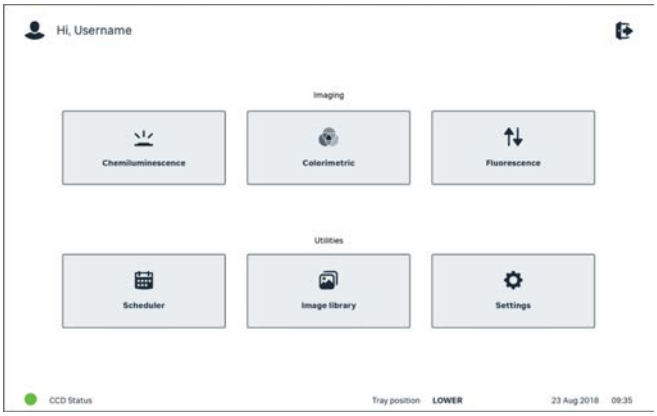
SNOW mode

The Signal to Noise Optimization Watch (SNOW) reduces noise and avoids saturation of the image. Multiple exposures are captured and merged by averaging into a single image, thus improving the signal-to-noise ratio. This setting can be used for chemiluminescence and fluorescence imaging methods. For more information, see the *Amersham ImageQuant 800 User Manual* .

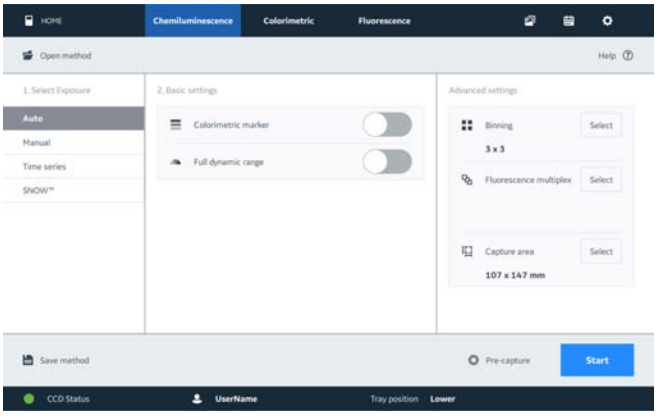
Capture an image

To capture an image, follow the steps below.

Step	Action
1	On the ***Home*** screen, tap ***Chemiluminescence***, ***Colorimetric***, or ***Fluorescence*** image capture.



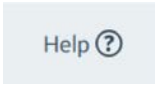
2	Under ***1.Select Exposure***, select the exposure type to be used.



3	Under ***2.Basic settings***, select the basic settings for the chosen exposure type.

Note:

*For guides on exposure selection, basic settings and advanced settings, tap the **Help** button in the top right corner.*



4	Under ***3.Advanced settings***, change the ***Capture area*** of the image, if required.

Step	Action
5	If ***Chemiluminescence*** or ***Fluorescence*** image mode was selected, it is also possible to change the ***Binning*** under ***3.Advanced settings***. For more information on binning, see the *Amersham ImageQuant 800 User Manual (29383813)*.
6	Tap ***Start***.
7	After the image has been captured, tap ***Save***. *Result:* The ***Save image*** window opens.
8	Tap the browse icon to navigate to and select the save location. 
9	Tap ***Save***.

Manage image files

To view and manage saved image files, follow the steps below. For more information on editing and managing images, see the *Amersham ImageQuant 800 User Manual (29383813)*.

Step	Action
1	Tap the ***Image library*** icon.
2	Tap ***Folder name*** and either select one of the default save locations or tap ***Browse*** to navigate to the save folder using the system browser. *Result:* The images in the save folder will show in the image view panel.
3	Tap to select the desired image. *Result:* The image properties will display in the image information panel. ***Note:*** *Multiple images can be selected at once.*
4	Tap ***Open*** to open the image file. *Result:* The image editor tab opens.

Step	Action
5	Use the menus on right side panel to ***Edit*** the image or change its ***Contrast*** and ***Intensity*** settings.
6	Tap ***Save*** to save changes to the image, or ***Cancel*** to return to the image capture window.

5.4 Shut down the Amersham ImageQuant 800

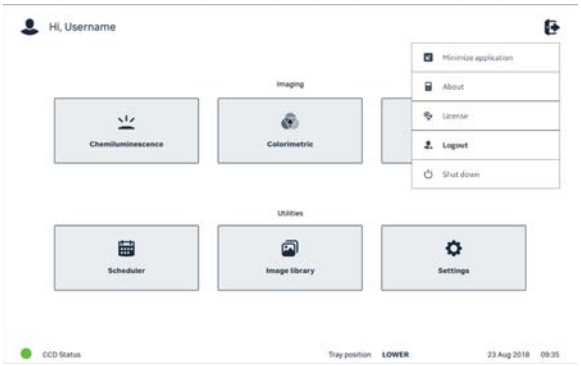
This section describes the shutdown procedure for the Amersham ImageQuant 800. This can be done via the Amersham ImageQuant 800 control software.

Log off current user

After running an experiment, the user should log out of the Amersham ImageQuant 800 to allow the next user to log in. To do this, follow the procedure below.

Step	Action
1	Tap the exit icon in the top right of the home screen.

2	Tap ***Logout***.



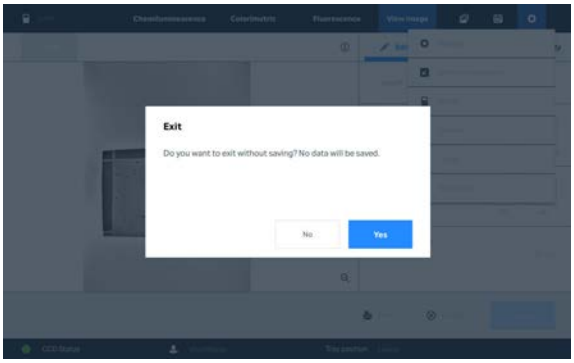
Result:

the screen displays the Amersham ImageQuant 800 login page.

3	After 30 minutes, the Amersham ImageQuant 800 enters sleep mode. The indicator glows soft blue to indicate the instrument is in sleep mode.

Step	Action
	Note: *The default time before sleep mode starts is 30 minutes. This can be changed, see Sleep mode, on page 95.*

Note: *If a user does not log out, the last screen after exposure will show when the instrument wakes up. The new user can save the image file and then log out. See the Amersham ImageQuant 800 User Manual (29383813). If the new user attempts to log out without saving the last image, a warning will display to warn that the image will not be saved.*

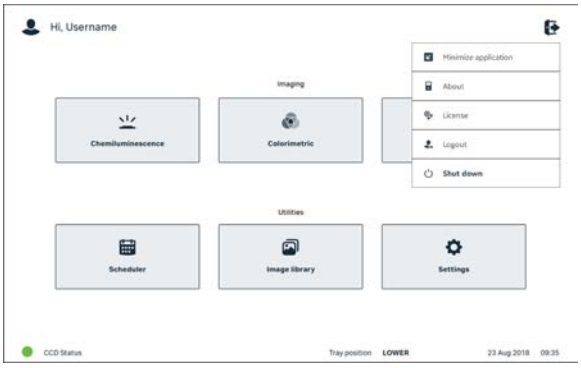


Shut down using the Amersham ImageQuant 800 control software

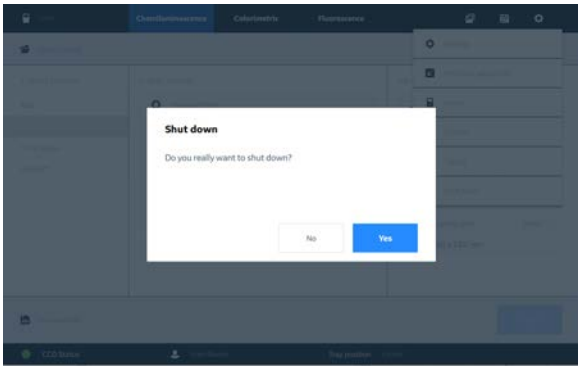
It is recommended to shut down the Amersham ImageQuant 800 from within the Amersham ImageQuant 800 control software. To do this, use the following procedure.

Step	Action
1	Tap the ***Exit*** icon in the top right corner of the ***Home*** screen. *Result:* A drop down list of exit options appears.

Step	Action
2	Tap ***Shut down***.



3	Tap ***Yes***.



Result:
The system shuts down.

Turn off the Amersham ImageQuant 800 instrument using the power button

To turn off the Amersham ImageQuant 800 using the power button, use the following procedure. This method is not recommended in place of the standard shut down procedure.

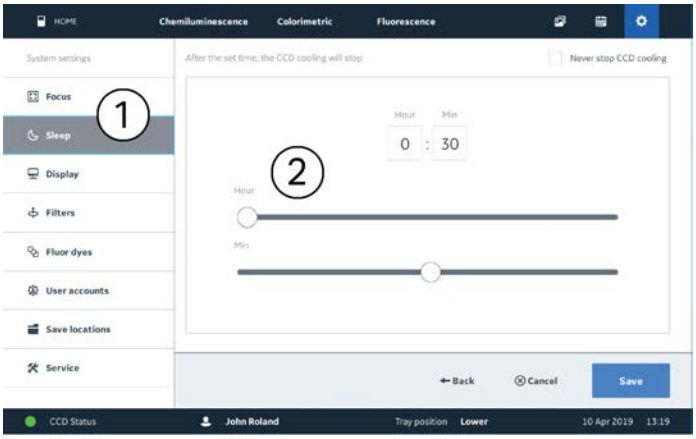
Note: *Shutting down the instrument by using the power button will not shut down the external computer. For full shutdown of the system, it is recommended to use the Amersham ImageQuant 800 control software method detailed above.*

Step	Action
1	Press the power button on the right side of the instrument.
2	The Amersham ImageQuant 800 instrument turns off. ***Note:*** *The external computer will not shut down using this method.*
3	After a predetermined period of time, the external computer will enter sleep mode. This can be set in the Windows OS.

Sleep mode

After a period of inactivity, the Amersham ImageQuant 800 enters sleep mode. The default time before entering sleep mode is 30 minutes. To adjust this period, use the following steps.

Step	Action
1	In the ***Settings*** tab, tap ***Sleep*** on the left side of the screen (1).



2	Tap and drag the slider for ***Hour*** and ***Min*** (2) to adjust the period of inactivity before the instrument enters sleep mode.
3	Tap ***Save***.

Note: *To prevent the Amersham ImageQuant 800 from entering sleep mode, tap the box marked* ***Never stop CCD cooling****. This action is not recommended.*

The Amersham ImageQuant 800 GxP exit menu

If you work in a regulated environment and have purchased and installed Amersham ImageQuant 800 GxP license for Amersham ImageQuant 800 control software the exit menu will differ. The following illustration describes the GxP functions of the exit menu.

Part	Function
1	***Audit trail viewer*** tab. Select to view the audit trail
2	***WinLock*** tab. Select to lock the system in the current state.
3	***Logout*** tab. Select to logout from Amersham ImageQuant 800 control software and Windows.

Refer to *Amersham ImageQuant 800 GxP User Manual (29620391)* for the instructions on the GxP functions.

6 Maintenance

About this chapter

For optimal performance, the Amersham ImageQuant 800 and accessories must be maintained regularly. This chapter provides information to enable users and service personnel to clean, maintain, calibrate, and store the product.

For all safety warnings, cautions, and notices, see *Maintenance, on page 19*.

WARNING

Electrical shock hazard. All instrument repairs or modifications should be performed by service personnel authorized by Cytiva. Do not open any covers or replace parts unless specifically stated in the user documentation.

WARNING

Do not use excessive amounts of liquids for cleaning the Amersham ImageQuant 800 instrument. This may result in instrument malfunction or electric shock.

WARNING

Decontaminate before maintenance. To avoid personnel being exposed to potentially hazardous substances, make sure that the instrument is properly decontaminated and sanitized before maintenance or service.

CAUTION

Always use appropriate Personal Protective Equipment (PPE) during operation and maintenance of Amersham ImageQuant 800.

- Protective eyewear
- Protective gloves
- Protective footware, preferably with steel lining

In this chapter

6.1 Cleaning before planned service

Cleaning before planned maintenance/service

To ensure the protection and safety of service personnel, all equipment and work areas must be clean and free of any hazardous contaminants before a Service Engineer starts maintenance work.

Please complete the checklist in the *On Site Service Health and Safety Declaration Form* or the *Health and Safety Declaration Form for Product Return or Servicing*, depending on whether the instrument is going to be serviced on site or returned for service, respectively.

Health and safety declaration forms

Health and safety declaration forms are available for copying or printing in the *Reference information* chapter of this manual, or on digital media supplied with the user documentation.

6.2 Instrument

WARNING

Do not use excessive amounts of liquids for cleaning the Amersham ImageQuant 800 instrument. This may result in instrument malfunction or electric shock.

CAUTION

Disconnect the power cord before cleaning the inside of the instrument.

NOTICE

Do not use abrasive cleaning materials, such as a scouring pad, for cleaning. This may cause damage to the instrument.

Use a soft dry cloth to clean the exterior of Amersham ImageQuant 800. For marks that are hard to remove, wipe with a soft cloth slightly dampened with water and a neutral detergent, or 70% ethanol, then wipe with a new clean, dry cloth. To clean the interior of the instrument, use a soft cloth slightly dampened with distilled water or 70% ethanol. Make sure to wipe the interior dry. Do not use any neutral domestic detergent, as the detergent residue may fluoresce when an image is captured.

6.3 Accessories

Introduction

Amersham ImageQuant 800 accessories must be cleaned after use. This section describes recommended cleaning agents and how to clean the accessories.

Recommended cleaning agents

The accessories may be washed with water and one of the following:

NOTICE

Cleaning agents should be for biochemical use to avoid that residues fluoresce when images are captured.

- 70% ethanol
- Mild, neutral detergent

For cleaning the sample tray, use the following:

- Isopropanol
- 6% H_2O_2

Cleaning sample trays, and NP lens

CAUTION

Wear gloves while cleaning. There might be residues of hazardous chemicals.

CAUTION

Handle the sample trays and NP lens with care to avoid dropping them.

NOTICE

Do not use organic solvents. These may damage the surface.

NOTICE

Do not use abrasive cleaning materials, such as a scouring pad, for cleaning. This might scratch the surface.

To clean trays and inserts, wash the accessory in water using a soft sponge that may be soaked in a cleaning agent.

After cleaning, rinse the accessory immediately in water, until no cleaning agent remains, and allow to air dry.

6.4 User maintenance

Regular inspections

Regularly inspect the Amersham ImageQuant 800 for the following conditions:

- The power supply plug is firmly secured in the power outlet.
- The power cord and supply plug do not become overheated.
- The power cord is not damaged in any way.
- The ventilation holes in the equipment are free from dust and dirt.

7 Troubleshooting

About this chapter

This chapter provides information to assist users and service personnel to identify and correct problems that may occur when operating the product.

If the suggested actions in this guide do not solve the problem, or if the problem is not covered by this guide, contact your Cytiva representative for advice.

In this chapter

7.1 Instrument problems

General troubleshooting procedure

If an error occurs, follow the procedure below to restart the system.

Step	Action
1	Make a note of the error code and error message on the monitor.
2	Turn off the instrument by pressing the power button on the right side of the instrument.
3	Wait for approximately 10 seconds and turn the system on again.
4	If the error persists, refer to this troubleshooting guide for more information.
5	If the error cannot be resolved using this troubleshooting guide, contact your Cytiva representative.

General problems

This section describes possible causes and corrective actions for various problems with the instrument. If the error persists after taking the suggested corrective actions, contact your Cytiva representative.

Error symptom	Possible cause	Corrective action
Atypical noise is heard	If noise comes from the camera head then a camera head failure has occurred	Turn off the power switch immediately and contact your Cytiva representative
Atypical odor is emitted	If odors are emitted from the camera head then a camera head failure has occurred	Turn off the power switch immediately and contact your Cytiva representative
	If odors are emitted then an instrument failure has occurred	Turn off the power switch immediately and contact your Cytiva representative
Smoke is emitted	If smoke is emitted from the camera head then a camera head failure has occurred	Turn off the power switch immediately and contact your Cytiva representative
	Smoke is emitted from the instrument then an instrument failure has occurred	Turn off the power switch immediately and contact your Cytiva representative

Error symptom	Possible cause	Corrective action
The Indicator is illuminated red	A hardware error has occurred	If an error code is displayed, make a note of it and contact your Cytiva representative
	The door is open during exposure	Close the door and repeat the exposure
Operation is not stopped when the door is opened	The light source is lit or the motor is running when the door to the instrument is open, an interlock failure has occurred	Turn off the instrument's Power switch immediately and contact your Cytiva representative
	The door to the instrument cannot be opened or closed or the door cannot be locked because a foreign object is present in the locking section or the door sensor	Remove the foreign object
	The door to the instrument cannot be opened or closed, or the door cannot be locked and no foreign object is present	The locking section is damaged. Contact your Cytiva representative
The instrument cannot be cooled down properly	The ambient air temperature is too high	Lower the room temperature to 28°C or lower
The instrument does not appear to respond to software control	The instrument is not connected to the external computer	Unplug the instrument and check that all connections between the instrument and external computer are secure

7.2 Image problems

Error symptom	Possible cause	Corrective action
An appropriate image does not appear	An image is overexposed	Shorten the exposure time
	An image is underexposed	Prolong the exposure time
	The focus is not correctly adjusted	Adjust the focus temporarily. See *Adjust focus, on page 78* If the problem persists contact your Cytiva representative
	The tray, or window covering the light source are dirty	Clean the tray or the window covering the light source
	The wrong sample tray is used	Change to the correct sample tray, see *Select the tray, on page 76*
	The wrong light source is selected	Select the correct light source, see the *Amersham ImageQuant 800 User Manual (29383813)*
	The size of the object exposed does not coincide with the exposed area	Place the sample correctly on the sample tray and place the tray in the correct tray position
Light leaks on the image	The door to the instrument is not completely closed	Close the door to the instrument and expose the image again
	The instrument is exposed to direct sunlight	Move the instrument to a place that is not in direct sunlight
The image appears misty	Moisture is condensing in the optical system	Turn off the instrument with the power button on the side panel and wait until the ambient environments meets the specifications
Unevenness appears on the image	The LED is deteriorated from age	Turn off the instrument and contact your Cytiva representative
Artefacts appear in a Colorimetric Epi image	The tray is used incorrectly	Rotate the gel sample 90° positioning the gel so that the lanes of the gel are parallel to the long side of the tray

7.3 Software problems

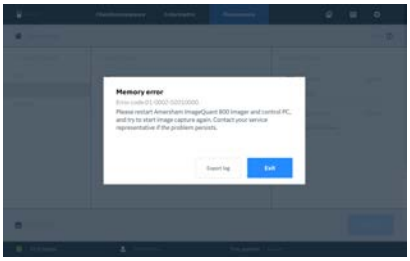
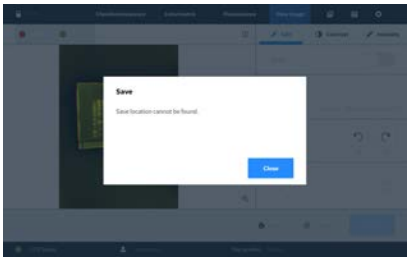
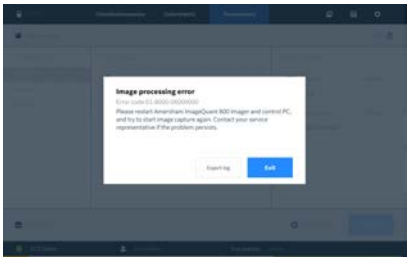
Error symptom	Possible cause	Corrective action
After exposure, no image is displayed on the screen	The light source does not function properly	Contact your Cytiva representative
	The sample is not in position	Check the sample position
The software is non-responsive	Transferring large amounts of files can impair the system's performance	Avoid file transfer during operation

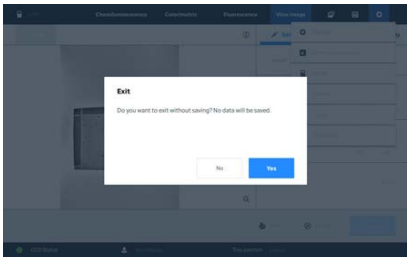
7.4 Error messages

Error messages and suggested corrective actions

The following table lists error messages that may appear during a run.

For error situations that are not fatal, the error message generally provides an option to continue or abort the run.

Description	Image	Corrective action
Memory error		Make a note of the error code and error type. Restart the instrument and scan again. Contact your Cytiva representative if the problem persists. To export an error log, tap ***Export log***.
Alert. Save location.		The selected save location cannot be found. Tap ***Close*** and select a new folder in which to save the image.
Capture was interrupted		Tap ***OK***. Make sure that system doors are firmly shut and take the image again.
System error		Make a note of the error message and error code. Contact your Cytiva service representative.

Description	Image	Corrective action
Save prompt.		The images captured in this session have not been saved. To return to the software and save the image, tap ***No***. To exit the software without saving and new images or methods, tap ***Yes***.

8 Reference information

About this chapter

This chapter lists the technical specifications of Amersham ImageQuant 800. The chapter also includes a chemical resistance guide, recycling information, regulatory information and ordering information, and Health and Safety Declaration form for service.

In this chapter

8.1 Specifications

Imaging specifications

Parameter	Data
Image sensor	CCD
Image sensor temperature	-25°C
Cooling down time	< 5 minutes
Lens	F0.74 (calculated for infinite distance)
Light source	UV Epi light: 365 nm Blue Epi light: 460 nm Green Epi light: 535 nm Red Epi light: 635 nm IRshort Epi light: 660 nm IRlong Epi light: 775 nm White Epi light: 470 to 635 nm White Trans light: 470 to 635 nm
Operation	Fully automated (auto exposure, no focus or other adjustment or calibrations needed)
Maximum sample size	160 × 220 mm
Greyscale	65 536 levels (16 bit)
Exposure time	Chemi: 1/10 second to 10 hours. Resolution: 1/10 second Fluor: 1/100 second to 10 minutes.- Resolution: 1/100 second
Dynamic range	4.8 orders of magnitude
Capture control	Binning, crop, time series, SNOW mode
Image output	Gray scale 16 bit tif
	Color image jpg
	Gray scale jpg

Parameter	Data
Emission filters	Cy2: 525BP20 Cy3(UV): 605BP40 Cy5:705BP40 IRshort: 715BP30 IRlong: 836BP46

Dimensions and weight

Unit	Dimensions	Weight
Amersham ImageQuant 800	360(W) × 700(H) × 480(D) mm	39 kg

Power supply

Parameter	Data
Input voltage	100 to 240 VAC
Voltage variation	± 10%
Frequency	50/60 Hz
Max power	2.5 to 1.0 A

Environmental requirements

The following table describes the environmental requirements for Amersham ImageQuant 800.

CAUTION

Do not use the instrument in a room with a temperature above +28°C. Higher temperatures does not allow the CCD to cool down properly (to -25°C).

Parameter	Requirement
Operating temperature/ humidity conditions	Temperature: 18°C to 28°C (with temperature fluctuation below 10°C per hour or lower) Humidity: 20% to 70% RH (no dew condensation)

Parameter	Requirement
Transportation/storage conditions	Temperature: -20°C to 70°C Humidity: 5% to 95% RH (no dew condensation)
Operation site	Indoor use
Maximum operating altitude	≤ 2000 m
Noise	< 60 dB(A) or lower A-weighted sound rpessure level LAeq, t ≤ 60 dB, fast (t = 0.25 s 1 M from the instrument)
Protection provided by enclosure	IP21
Overvoltage category	Transient overvoltage category II
Rated pollution applied	Pollution degree 2

Note:

1. *When the above conditions cannot be satisfied, take appropriate actions.*
2. *Take into consideration the workflow and ancillary facilities when planning the installation.*
3. *Any required construction and electricity/air conditioning work must be completed prior to installation.*
4. *It is not desirable to have a heat source near the Amersham ImageQuant 800 air intakes, even if the other environmental requirements have been met.*
5. *Do not install the equipment near a window. Avoid direct sunlight. Make sure that blinds are attached to nearby windows.*
6. *Do not place objects near the power outlet to allow easy access to the power cord for disconnection in case of emergency.*

8.2 Recycling information

Introduction

This section contains information about the decommissioning of the product.

CAUTION

Always use appropriate personal protective equipment when decommissioning the equipment.

Decontamination

The product must be decontaminated before decommissioning. All local regulations must be followed with regard to scrapping of the equipment.

Disposal of the product

When taking the product out of service, the different materials must be separated and recycled according to national and local environmental regulations.

Disposal of electrical components

Waste electrical and electronic equipment must not be disposed of as unsorted municipal waste and must be collected separately. Please contact an authorized representative of the manufacturer for information concerning the decommissioning of the equipment.

Disposal of batteries

Waste batteries and accumulators must not be disposed of as unsorted municipal waste and must be collected separately. Follow applicable local regulations for recycling of batteries and accumulators.

Instructions for disposal

Follow the instructions below for disposal of the Amersham ImageQuant 800:

Step	Action
1	Separate all electronic components (terminal strips, power supplies, transmitters, pumps, probes / sensors, etc.) from the system cabinet.

Step	Action
2	Decontaminate the Amersham ImageQuant 800 cabinet following appropriate procedures depending on what type of environment the unit was located in. Follow local and/or national/federal requirements for disposal of the Amersham ImageQuant 800 cabinet.
3	Dispose of electronic components as specified by local regulations depending on material used in the construction of the components. Follow local and/or national/federal requirements for disposal of the electronic components.

8.3 Regulatory information

Introduction

This section lists the regulations and standards that apply to the product.

In this section

8.3.1 Contact information

Contact information for support

To find local contact information for support and sending troubleshooting reports, visit *cytiva.com/contact*.

Manufacturing information

The table below summarizes the required manufacturing information.

Requirement	Information
Name and address of manufacturer	Cytiva Sweden AB Björkgatan 30 SE 751 84 Uppsala Sweden
Telephone number of manufacturer	+ 46 771 400 600

8.3.2 European Union and European Economic Area

Introduction

This section describes regulatory information for the European Union and European Economic Area that applies to the equipment.

Conformity with EU Directives

See the EU Declaration of Conformity for the directives and regulations that apply for the CE marking.

If not included with the product, a copy of the EU Declaration of Conformity is available on request.

CE marking

The CE marking and the corresponding EU Declaration of Conformity is valid for the instrument when it is:

- used according to the *Operating Instructions* or user manuals, and
- used in the same state as it was delivered, except for alterations described in the *Operating Instructions* or user manuals.

8.3.3 Great Britain

Introduction

This section describes regulatory information for Great Britain that applies to the equipment.

Conformity with UK Regulations

See the UK Declaration of Conformity for the regulations that apply for the UKCA marking.

If not included with the product, a copy of the UK Declaration of Conformity is available on request.

UKCA marking

The UKCA marking and the corresponding UK Declaration of Conformity is valid for the instrument when it is:

- Used according to the *Operating Instructions* or user manuals, and
- Used in the same state as it was delivered, except for alterations described in the *Operating Instructions* or user manuals.

8.3.4 Eurasian Economic Union Евразийский экономический союз

This section describes the information that applies to the product in the Eurasian Economic Union (the Russian Federation, the Republic of Armenia, the Republic of Belarus, the Republic of Kazakhstan, and the Kyrgyz Republic).

Introduction

This section provides information in accordance with the requirements of the Technical Regulations of the Customs Union and (or) the Eurasian Economic Union.

Введение

В данном разделе приведена информация согласно требованиям Технических регламентов Таможенного союза и (или) Евразийского экономического союза.

Manufacturer and importer information

The following table provides summary information about the manufacturer and importer, in accordance with the requirements of the Technical Regulations of the Customs Union and (or) the Eurasian Economic Union.

Requirement	Information
Name, address and telephone number of manufacturer	See *Manufacturing information*
Importer and/or company for obtaining information about importer	Cytiva RUS LLC 109004, Moscow internal city area Tagansky municipal district Stanislavsky str., 21, building 3, premises I, office 57 Russian Federation Telephone: +7 499 609 15 50 E-mail: *rucis@cytiva.com*

Информация о производителе и импортере

В следующей таблице приводится сводная информация о производителе и импортере, согласно требованиям Технических регламентов Таможенного союза и (или) Евразийского экономического союза.

Требование	Информация
Наименование, адрес и номер телефона производителя	См. *Информацию об изготовлении*
Импортер и/или лицо для получения информации об импортере	ООО "Цитива РУС" 109004, город Москва вн.тер.г. муниципальный округ Таганский улица Станиславского, дом 21, строение 3, помещение I, комната 57 Российская Федерация Телефон: +7 499 609 15 50 Адрес электронной почты: *rucis@cytiva.com*

Description of symbol on the system label
Описание обозначения на этикетке системы

This Eurasian compliance mark indicates that the product is approved for use on the markets of the Member States of the Customs Union of the Eurasian Economic Union

Данный знак о Евразийском соответствии указывает, что изделие одобрено для использования на рынках государств-членов Таможенного союза Евразийского экономического союза

8.3.5 Regulations for North America

Introduction

This section describes the information that applies to the product in the USA and Canada.

NRTL certification

This symbol indicates that the Amersham ImageQuant 800 has been certified by a Nationally Recognized Testing Laboratory (NRTL).

NRTL means an organization, which is recognized by the US Occupational Safety and Health Administration (OSHA) as meeting the legal requirements of Title 29 of the Code of Federal Regulations (29 CFR), Part 1910.7.

FCC compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: *The user is cautioned that any changes or modifications not expressly approved by Cytiva could void the user's authority to operate the equipment.*

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAN ICES/NMB compliance

This product complies with the Canadian standard ICES-003/NMB-003 concerning electromagnetic compatibility.

8.3.6 Regulatory statements

Introduction

This section shows regulatory statements that apply to regional requirements.

EMC emission, CISPR 11: Group 1, Class A statement

NOTICE

This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

South Korea

Regulatory information to comply with the Korean technical regulations.

NOTICE

Class A equipment (equipment for business use).

This equipment has been evaluated for its suitability for use in a business environment.

When used in a residential environment, there is a concern of radio interference.

유의사항

A급 기기 (업무용 방송통신 기자재)

이 기기는 업무용환경에서 사용할 목적으로 적합성평가를 받은 기기

로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

8.3.7 Declaration of Hazardous Substances (DoHS)

根据 SJ/T11364-2014《电子电气产品有害物质限制使用标识要求》特提供如下有关污染控制方面的信息。

The following product pollution control information is provided according to SJ/T11364-2014 Marking for Restriction of Hazardous Substances caused by electrical and electronic products.

电子信息产品污染控制标志说明
Explanation of Pollution Control Label

该标志表明本产品含有超过中国标准 GB/T 26572《电子电气产品中限用物质的限量要求》中限量的有害物质。标志中的数字为本产品的环保使用期，表明本产品在正常使用的条件下，有毒有害物质不会发生外泄或突变，用户使用本产品不会对环境造成严重污染或对其人身、财产造成严重损害的期限。单位为年。

为保证所申明的环保使用期限，应按产品手册中所规定的环境条件和方法进行正常使用，并严格遵守产品维修手册中规定的定期维修和保养要求。

产品中的消耗件和某些零部件可能有其单独的环保使用期限标志，并且其环保使用期限有可能比整个产品本身的环保使用期限短。应到期按产品维修程序更换那些消耗件和零部件，以保证所申明的整个产品的环保使用期限。

本产品在使用寿命结束时不可作为普通生活垃圾处理，应被单独收集妥善处理。

This symbol indicates the product contains hazardous materials in excess of the limits established by the Chinese standard GB/T 26572 Requirements of concentration limits for certain restricted substances in electrical and electronic products. The number in the symbol is the Environment-friendly Use Period (EFUP), which indicates the period during which the hazardous substances contained in electrical and electronic products will not leak or mutate under normal operating conditions so that the use of such electrical and electronic products will not result in any severe environmental pollution, any bodily injury or damage to any assets. The unit of the period is “Year”.

In order to maintain the declared EFUP, the product shall be operated normally according to the instructions and environmental conditions as defined in the product manual, and periodic maintenance schedules specified in Product Maintenance Procedures shall be followed strictly.

Consumables or certain parts may have their own label with an EFUP value less than the product. Periodic replacement of those consumables or parts to maintain the declared EFUP shall be done in accordance with the Product Maintenance Procedures.

This product must not be disposed of as unsorted municipal waste, and must be collected separately and handled properly after decommissioning.

有害物质的名称及含量
Name and Concentration of Hazardous Substances

产品中有害物质的名称及含量
Table of Hazardous Substances' Name and Concentration

部件名称 Component name	有害物质 Hazardous substance					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
ImageQuant 800 29399481	X	0	0	0	0	0
ImageQuant 800 UV 29399482	X	0	X	0	0	0
ImageQuant 800 OD 29399483	X	0	X	0	0	0
ImageQuant 800 Fluor 29399484	X	0	X	0	0	0

0: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。

X: 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。

- 此表所列数据为发布时所能获得的最佳信息.

0: Indicates that this hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in GB/T 26572.

X: Indicates that this hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in GB/T 26572

- Data listed in the table represents best information available at the time of publication.

8.3.8 Other regulations and standards

Introduction

This section describes the standards that apply to the product.

Light sources

The safety of the LED light sources in this instrument has been assessed by risk analysis in accordance with EN 61010-1.

The Amersham ImageQuant 800, depending on configuration or upgrades, is equipped with some or all light sources in the table below:

Light sources	Wavelength
UV LED	365 nm
White LED	470 nm to 635 nm
Blue LED	460 nm
Green LED	535 nm
Red LED	635 nm
IRshort LED	660 nm
IRlong LED	775 nm

8.4 Health and Safety Declaration Form

On site service

cytiva

On Site Service Health & Safety Declaration Form

Service Ticket #:	

To make the mutual protection and safety of Cytiva service personnel and our customers, all equipment and work areas must be clean and free of any hazardous contaminants before a Service Engineer starts a repair. To avoid delays in the servicing of your equipment, complete this checklist and present it to the Service Engineer upon arrival. Equipment and/or work areas not sufficiently cleaned, accessible and safe for an engineer may lead to delays in servicing the equipment and could be subject to additional charges.

Yes	No	Review the actions below and answer "Yes" or "No". Provide explanation for any "No" answers in box below.
○	○	**Instrument has been cleaned of hazardous substances**. Rinse tubing or piping, wipe down scanner surfaces, or otherwise make sure removal of any dangerous residue. Make sure the area around the instrument is clean. If radioactivity has been used, perform a wipe test or other suitable survey.
○	○	**Adequate space and clearance is provided to allow safe access** for instrument service, repair or installation. In some cases this may require customer to move equipment from normal operating location prior to Cytiva arrival.
○	○	**Consumables, such as columns or gels, have been removed or isolated from the instrument and from any area that may impede access to the instrument.**
○	○	**All buffer / waste vessels are labeled. Excess containers have been removed from the area to provide access.**
Provide explanation for any "No" answers here:		

Equipment type / Product No:		**Serial No:**	

I hereby confirm that the equipment specified above has been cleaned to remove any hazardous substances and that the area has been made safe and accessible.

Name:		**Company or institution:**	
Position or job title:		**Date (YYYY/MM/DD):**	
Signed:			

Product return or servicing

cytiva

Health & Safety Declaration Form for Product Return or Servicing

Return authorization number:		*and/or* **Service Ticket/Request:**	

To make sure the mutual protection and safety of Cytiva personnel, our customers, transportation personnel and our environment, all equipment must be clean and free of any hazardous contaminants before shipping to Cytiva. To avoid delays in the processing of your equipment, complete this checklist and include it with your return.

1. Note that items will NOT be accepted for servicing or return without this form
2. Equipment which is not sufficiently cleaned prior to return to Cytiva may lead to delays in servicing the equipment and could be subject to additional charges
3. Visible contamination will be assumed hazardous and additional cleaning and decontamination charges will be applied

Yes	No	Specify if the equipment has been in contact with any of the following:	
◯	◯	Radioactivity (specify)	
◯	◯	Infectious or hazardous biological substances (specify)	
◯	◯	Other Hazardous Chemicals (specify)	

Equipment must be decontaminated prior to service / return. Provide a telephone number where Cytiva can contact you for additional information concerning the system / equipment.

Telephone No:		
Liquid and/or gas in equipment is:	☐	**Water**
	☐	**Ethanol**
	☐	**None, empty**
	☐	**Argon, Helium, Nitrogen**
	☐	**Liquid Nitrogen**
	Other, specify	

Equipment type / Product No:		**Serial No:**	

I hereby confirm that the equipment specified above has been cleaned to remove any hazardous substances and that the area has been made safe and accessible.

Name:		**Company or institution:**	
Position or job title:		**Date (YYYY/MM/DD)**	
Signed:			

For local office contact information, visit cytiva.com/contact.
28980027 AD 04/2020

To receive a return authorization number or service number, call local technical support or customer service.

Index

S

T

U

cytiva

cytiva.com/products

For local office contact information, visit cytiva.com/contact

29372604 AD V:10 05/2021